



Bringing Whales Ashore: Oceans and the Environment of Early Modern Japan, 1600-1900

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Bringing Whales Ashore:
Oceans and the Environment of Early Modern Japan, 1600-1900

A dissertation presented

by
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to
The Committee on History and East Asian Languages

in partial fulfillment of the requirements
for the degree of
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in the subject of
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Abstract

Whales are an enigma. It is difficult to pin them down because they straddle categories. Whales were difficult not just because of their extraordinary size, but rather because they were peculiar sorts of fish, with meat more like wild boar than tuna. In the same way that they existed at the intersection of classifications, with features of land and sea creatures, whales also were a nexus in a web of linkages between the ocean and the shore. By focusing on whales and the boundaries they straddle, this dissertation highlights the often surprising interconnections between coastal activities and inland life in early modern Japan (1600-1900).

Hunting whales required complex coordination and intensive capital investment. Early modern whaling was thus a substantial enterprise employing sometimes thousands of people, and contributing significantly to the economy (Chapter 1). Many everyday objects not obviously from marine sources - pesticides used on rice, flexible springs driving the action of theater puppets and clockwork dolls - were made from whale parts. Chapter 2 looks at this material connection between whale products and terrestrial life. Whaling and whale products then had a strong intangible impact on the imagination, most visible in the fact that whales were the only nonhuman animals for which there are detailed anatomical diagrams in this period of Japan's history. Chapter 3 examines the ways whales drew scientific and popular curiosity all over Japan. There were even, as discussed in Chapter 4, religious ceremonies for dead whales closely resembling those for deceased humans. With whale graves, memorial services and death registers, whales were metaphysically treated like humans. The boundaries between humans and other inhabitants of the natural world were thus not as simple as people on one side, animals on the other. Finally, the last chapter considers how this network of influences was particular to the early modern period. The late nineteenth-century move to modern, pelagic whaling altered the role of whales dramatically as whalers moved into new environments away from the Japanese coast.

Historians of early modern Japan have tended to focus on inland life, neglecting the relationship between landlocked and coastal areas. My study of whales illuminates the richly textured diversity of the connections between the sea and the land in the Japanese archipelago.

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I have presented portions of my work at many conferences over the course of my graduate work. Although the chapter in *Japan at Nature's Edge: The Environmental Context of a Global Power* which resulted from the Japan's Natural Legacies conference in the fall of 2008

does not appear in this dissertation, it comes from the same body of research. The kindness and support of all the members of that conference helped to start my dissertation off on a high note. I am grateful in particular to Ian Jared Miller, Julia Adeney Thomas, and Brett L. Walker who put the project together. I would also like to acknowledge the help of Federico Marcon, William Tsutsui, Micah Muscolino, Ryan Jones, Michael Chiarappa, Toshihiro Higuchi, Sharon Kingsland, Denise Phillips, Victoria Lee, and others who attended my talks at East Asian graduate conferences at Harvard and Columbia, at meetings for the American Society of Environmental History, the Association for East Asian Environmental History, the International Society for the Study of Religion, Nature, and Culture, and other workshops and meetings over the years.

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Introduction

Marine Environmental History and Japan's Maritime Space

The geographical shorthand for Japan is a list of islands: Kyushu, Shikoku, and Honshu before the end of the nineteenth century, with the addition of Hokkaido and the Ryukyu Islands (Okinawa) after that point. This picture was, of course, more complicated during the height of imperial Japan's colonial era. But even then, the heart of the Japanese empire was the archipelago to which the current nation is once again limited. And yet, while the word archipelago clearly refers to water as well as land, political histories of the Tokugawa period (1603-1868, more or less contiguous with Japan's early modern period) tend to focus on the terrestrial boundaries and powers of the domains under the control of the Tokugawa state.¹ Some scholars focus on defining the nature of Japan by considering the divide between the center and periphery. This manifests in different ways depending on which tension is of interest to a given scholar: tension between cities and countryside can be investigated in the form of peasant protests against the city-based central authority their taxes supported, while political tension can also be defined as differences between distant domains and the shogunal center of power.² Sometimes Japan is framed more regionally, as a contrast between mountain areas and lower, rice-growing regions.³

1 Prominent examples include: Harold Bolitho, *Treasures among Men: The Fudai Daimyo in Tokugawa Japan* (New Haven: Yale University Press, 1974), Mark Ravina, *Land and Lordship in Early Modern Japan* (Stanford: Stanford University Press, 1998), and Ronald P. Toby, *State and Diplomacy in Early Modern Japan: Asia in the Development of the Tokugawa Bakufu* (Stanford: Stanford University Press, 1991).

2 For peasant protests, see Herbert P. Bix, *Peasant Protest in Japan, 1590-1884* (New Haven: Yale University Press, 1986), Stephan Vlastos, *Peasant Protests and Uprisings in Tokugawa Japan* (Berkeley: University of California Press, 1986), Anne Walthall, *Social Protest and Popular Culture in Eighteenth-Century Japan* (Tucson, Ariz.: for the Association for Asian Studies by University of Arizona Press, 1986), and *Peasant Uprisings in Japan: A Critical Anthology of Peasant Histories* (Chicago: University of Chicago Press, 1992). Examples of studies of domainal power relations include Philip C. Brown, *Central Authority and Local Autonomy in the Formation of Early Modern Japan: The Case of Kaga Domain* (Stanford: Stanford University Press, 1993), Ravina, *Land and Lordship in Early Modern Japan*, and Luke S. Roberts, *Mercantilism in a Japanese Domain: The Merchant Origins of Economic Nationalism* (Cambridge: Cambridge University Press, 1998).

3 This is the case with Amino Yoshihiko, one of the few historians who has suggested looking at the marine environment as part of Japanese history, in his case particularly for the medieval period. For his collected works, see Amino Yoshihiko, ed. *Amino Yoshihiko chosakushū*, 19 vols. (Tokyo: Iwanami Shoten, 2007). Michael Lewis summarizes the common thread of his writing thus: "Amino endorses the importance of Japan as being

But, apart from Amino Yoshihiko's (網野義彦) work on medieval Japan and the scholars who follow his lead, these various conceptions tend to draw a line at the shore.⁴ The active space of investigation for histories of early modern Japan thus tends to be limited to the terrestrial areas of the archipelago.

As part of a series published in 1993 on the culture of the ocean and archipelago, Amino pointed out that there was an increasing interest in many scholarly fields on considering the ocean's relationship to Japan. However, while archaeology, folklore studies, cultural anthropology, and similar fields have turned to the world of the ocean in studying Japan, he argued that it is much more difficult to get people to consider the importance of anything outside of the rice-centered agricultural society in Japanese history. He pointed out that the historical viewpoint that cuts out any non-farming peoples has deep roots in the Japanese school system, where the most widely-published high school history textbooks characterize agriculture as the center of feudal society.⁵ Cultural anthropologist Jun'ichiro Suwa suggests that the construction of the Japanese state using the framework of Chinese and Korean systems made it possible to overlook Japan's archipelagic nature in favor of a conception of more continental-style space for Honshu, Shikoku and Kyushu.⁶ The early history of the Japanese state, beginning in the late seventh century with the *ritsuryō* (律令) codes based on a Chinese, agriculturally-centered tax system, left no space for considering other employments within the common people paying

composed of various autonomous or semi-autonomous zones in coastal regions and mountain settlements" Michael Lewis, "Center and Periphery in Japanese Historical Studies," in *A Companion to Japanese History*, ed. William M. Tsutsui (Malden, MA: Blackwell, 2007), 427.

4 Clear examples of how Amino viewed Japanese history from a marine as well as terrestrial perspective can be seen in Amino Yoshihiko, *Umi to rettō no chūsei* (Tokyo: Nihon Edikaaskuuru Shuppansha, 1992) and *Umi kara mita Nihon shizō: Oku-Noto chiiki to jikkō wo chūshin to shite*, Kawai bukuretto 25 (Nagoya-shi: Kawai Bunka Kyōiku Kenkyūjo (Kawai Shuppan), 1994).

5 Amino Yoshihiko, *Nihon shakai saikō: Kaimin to rettō bunka* (Tokyo: Shōgakkan, 1994), 181-2.

6 Jun'ichiro Suwa, "Shima and Aquapelagic Assemblages," *Shima: The International Journal of Research into Island Cultures* 6, no. 1 (2012). As part of this argument, he points out that these main islands of Japan (along with Hokkaido) do not have an "island" or *shima* suffix to them, unlike smaller surrounding islands in the archipelago.

taxes. Over time, this developed into a commonly-held assumption that all commoners or peasants (the *hyakushō* 百姓) were farmers rather than a collection of different occupations such as fishermen, lumberjacks, sailors and also farmers. Although the *ritsuryō* system did not last continuously until the seventeenth century, the association of commoners with farming was cemented by the Tokugawa tax system, which returned to an agriculturally-centered focus with its rice-based payments.⁷

This is not to say that no histories of Japan's ties to the ocean have been written, as there have been a number of studies of fishing villages, for example. In English, very little work has been done in this area, with only one monograph by an anthropologist on Tokugawa-period fishing villages, as well as David Howell's history of the Hokkaido herring fishery.⁸ In Japanese, there is a larger circle of scholars interested in the topic, but they have usually focused on a specific village or fishery, rather than on rewriting Japanese history as a whole to include its maritime space. There are also histories of marine transport which similarly examine one aspect of the way in which people lived with the ocean, but do not necessarily expand that view to alter the fundamental picture of Japanese history focused on an agricultural framework, especially with the minimal amount of work published in English.⁹ By identifying "Japan" as the terrestrial part of the islands that make up the archipelago, and moving studies of fisheries into a particular specialist audience rather than including them in the wider history of Japan, an important part of what makes up Japan is left unexamined. William Tsutsui, in his discussion of the expansion of

7 Amino, *Nihon shakai saikō*, 196-9.

8 Arne Kalland, *Fishing Villages in Tokugawa Japan*, Nordic Institute of Asian Studies Recent Monographs ; No. 69 (Honolulu: University of Hawaii Press, 1995); David L. Howell, *Capitalism from Within: Economy, Society and the State in a Japanese Fishery* (Berkeley: University of California Press, 1995).

9 Louis M. Cullen, "Statistics of Tokugawa Coastal Trade and Bakumatsu and Early Meiji Foreign Trade," *Japan Review* 21(2009), Robert I. Hellyer, "The Missing Pirate and the Pervasive Smuggler: Regional Agency in Coastal Defense, Trade, and Foreign Relations in Nineteenth-Century Japan," *The International History Review* 27, no. 1 (2005), Furuta Ryōichi and Hirai Yoshikazu, *A Short History of Japanese Merchant Shipping*, trans. Duncan Macfarlane (Tokyo: Tokyo News Service, 1967).

the modern Japanese empire, argues that "understanding imperialism requires us to consider oceans as well as land masses."¹⁰ I would add that it is equally important to consider oceans in contexts outside of the political configuration of empire - especially for a place so surrounded and touched by the seas as the archipelago of Japan. A marine environmental history of early modern Japan, broadly defined as from 1600-1900, brings the coastal waters that connected the Japanese islands together into the historical picture, and shows how people on these islands lived not just with the land but also with the sea. Of course, the sea was important also in the periods before and after the Tokugawa, but scholarly attention on the marine influences on Japan during the early modern period has been particularly lacking, so this is where my study focuses.

The maritime borders of Tokugawa Japan were more constrained than they were during the later period of imperial expansion. However, even during the Tokugawa period, Japanese territory did not end at the waterline. Coastal shipping, especially from Kyushu through the Inland Sea to Osaka, was quite important for getting rice taxes from distant domains to the mercantile and political centers of the country. Although foreign trade was limited, Japanese coastal shipping was most likely the largest in the world at the time. Fisheries were also an important presence in these waters.¹¹ Although the complex organization of fifteenth- and sixteenth-century piracy in the Inland Sea did not continue into the Tokugawa peace, Peter Shapinsky's description of pirates who acted as "sea-lords", with domains that were sea-based rather than land-based, demonstrates the powerful change in perspective that can result from an examination of the coastal waters as a part of larger Japanese society and politics.¹² Similarly,

10 William M. Tsutsui, "The Pelagic Empire: Reconsidering Japanese Expansion," in *Japan at Nature's Edge: The Environmental Context of a Global Power*, ed. Ian Jared Miller, Julia Adeney Thomas, and Brett L. Walker (Honolulu: University of Hawai'i Press, 2013), 21.

11 See Cullen, "Statistics of Tokugawa Coastal Trade and Bakumatsu and Early Meiji Foreign Trade" for details of coastal trade. He also points out the importance of fisheries (which are not counted in the trade statistics) in *A History of Japan 1582-1941: Internal and External Worlds* (New York: Cambridge University Press, 2003), 84.

12 See Peter D. Shapinsky, "Predators, Protectors, and Purveyors: Pirates and Commerce in Late Medieval Japan," *Monumenta Nipponica* 64, no. 2 (2009) and "From Sea Bandits to Sea Lords: Nonstate Violence and Pirate

there is some work focusing on the expansion of fisheries by the Japanese empire in the twentieth century, but the period in between these two eras remains under-served.¹³ David Howell's work on the herring fishery in the north is a very good start at considering the influence of fisheries in the Tokugawa period, but there is little else to go with it.¹⁴ Despite this lack of focused scholarship, the coastal waters where sailors and fishermen worked were an influential part of what we should consider to be within the bounds of early modern Japan.

Marcia Yonemoto has focused on the role of the sea in early modern Japan by interpreting it through cartographical representations. She argues that the restriction to coastal waters in this period "strengthened a general disinclination to traverse, explore, or incorporate oceans into Japan's territory."¹⁵ However, she refers here more to the question of absorbing the larger Pacific Ocean into Japanese territory, since she also notes that there was a conception of "friendly and sustaining seas bordering the archipelago [which] stood in constant opposition to the distant and threatening oceans."¹⁶ Just because the period of restricted trade limited how far away from shore Japanese fishermen and sailors tended to travel, this does not mean that we should forget the importance of the nearshore waters they relied upon. In another discussion of eighteenth-century maps, Yonemoto presents two examples which help highlight the inclusion of coastal waters in the consciousness of early modern Japanese people. From the title alone, the *Nihon kaisan chōriku zu* (日本海山潮陸圖; Map of the seas, mountains and lands of Japan) is a map which clearly includes at least some of the ocean around the Japanese islands within the conception of

Identities in Fifteenth- and Sixteenth-Century Japan," in *Elusive Pirates, Pervasive Smugglers: Violence and Clandestine Trade in the Greater China Seas*, ed. Robert J. Antony (Hong Kong: Hong Kong University Press, 2010).

13 See, for example, Tsutsui, "The Pelagic Empire," and Micah Muscolino, "Fisheries Build up the Nation," in *Japan at Nature's Edge: The Environmental Context of a Global Power*, ed. Ian Jared Miller, Julia Adeney Thomas, and Brett L. Walker (Honolulu: University of Hawai'i Press, 2013), 56-70.

14 Howell, *Capitalism from Within*.

15 Marcia Yonemoto, "Maps and Metaphors of the 'Small Eastern Sea' in Tokugawa Japan (1603-1868)," *Geographical Review* 89, no. 2, Oceans Connect (1999): 170.

16 Ibid.

Japan. And it does so by including details of waves and ships between the islands, making the coastal waters more than simply blank space around the land.¹⁷ A road map from 1791 also includes sea lanes with its overland routes, again indicating the interlinkage of, at the very least, travel options on land and sea.¹⁸ But, of course, people did more than just use the sea as a mode of transportation; fishermen also used it as a source of livelihood. One of the most famous of the new types of specialized fishery that developed in early modern Japan would have to be organized whaling. In 2006, W. Jeffrey Bolster published a call for environmental historians to understand the ocean as an important part of our environment in need of historical analysis. In the spirit of his argument that "historians are uniquely situated to reconstruct the inextricably tangled stories of people and the oceans", my study is a marine environmental history which considers the links between the Japanese people and the whales that inhabited the ocean near their shores.¹⁹

Marine environmental history is a relatively new field, and Japan is not the only region whose histories tend to have an overwhelmingly terrestrial focus. Despite the fact that oceans cover nearly seventy percent of the world's surface, most environmental history has centered on the terrestrial environment. J.R. McNeill's description of environmental history in 2003 as a "history of the mutual relations between humankind and the rest of nature" certainly leaves room for both marine and terrestrial types of environment.²⁰ However, he then goes on to describe environmental history with nothing but land-based examples, especially in the case where he contends that "historical geographers and environmental historians are interested in similar sorts of questions," and provides many examples of geographically-based histories, noting that there is

17 Marcia Yonemoto, *Mapping Early Modern Japan: Space, Place, and Culture in the Tokugawa Period* (Berkeley: University of California Press, 2003), 27-8. The map is Figure 4.

18 Ibid.

19 W. J. Bolster, "Opportunities in Marine Environmental History," *Environmental History* 11, no. 3 (2006), 569.

20 J.R. McNeill, "Observations on the Nature and Culture of Environmental History," *History and Theory* 42, no. 4 (2003), 6.

a definite terrestrial bias to environmental history thus far.²¹ This terrestrial focus tends to obscure the importance of the ocean and marine organisms in human history, while also promoting a vision of the ocean as an ahistorical entity.

The problem is not confined to a lack of perception within the environmental history community, but rather stems from a broader tendency to see the oceans as fundamentally mysterious, unknowable, and thus unchanging. As Professor of Marine Sciences James Carlton noted in an editorial for *Conservation Biology* in 1998, "our ability to overlook changes in the oceans is profound."²² In fact, studies of failing fish populations or other evidence of drastic changes in marine communities tend to be taken as "exceptions to our paradigms of consistency in the ocean, rather than as fundamental inconsistencies to our view" that the oceans are essentially unaltered and unalterable.²³ The tendency of people to ignore what they cannot see can lead to surprise and consternation when a fish population crashes from overharvesting: until a species of fish suddenly cannot be easily extracted from the ocean, it can be difficult to be certain of the total population hidden underwater. This is true even under strict and thoroughly researched management, such as that of the Newfoundland cod population, which crashed in the early 1990s after a decade of supposedly sustainable yields.²⁴ The ten pieces in the marine environmental history forum published in the January 2013 edition of *Environmental History* show that there is growing interest in reshaping our ideas of the ocean, but there is a long way to go before this kind of work can change such fundamental assumptions.²⁵

21 Ibid., 9

22 James T. Carlton, "Editorial: Apostrophe to the Ocean," *Conservation Biology* 12, no. 6 (1998), 1166.

23 Ibid., 1166

24 Ransom A. Myers, Jeffrey A. Hutchings, and Nicholas J. Barrowman, "Why Do Fish Stocks Collapse? The Example of Cod in Atlantic Canada," *Ecological Applications* 7, no. 1 (1997).

25 This forum is the first section of the journal *Environmental history* volume 18, number 1, January 2013, p 3-126.

A History of Whales, Not a History of Whaling

A common but misguided assumption related to early modern Japanese whaling is that it was somehow a more sustainable fishery than the 20th century modern whaling industry which decimated Antarctic whale populations. Even Jun Morikawa (森川純), whose work explicitly deconstructs the cultural and tradition-based arguments for the continuation of Japanese whaling today, says that Tokugawa-period whaling was sustainable.²⁶ As part of this assumption, this form of whaling is framed as small-scale, local, and with limited impact on the rest of Japan's economy and society. While individual whaling groups may seem to have had less of an impact when compared to the large corporations that pursued whales in the twentieth century, I feel that Morikawa falls into the same trap that terrestrially-focused historians have: he assumes that the marine environment did not have much influence on areas of Japan away from the individual fishing villages. By looking at the example of whales and whaling more closely, one can see that fishing villages' products and interactions with coastal waters could actually have a wide-ranging impact on people outside their local area, both materially and culturally.

Very little has been written in English about the history of whaling in early modern Japan. Currently, there are two analyses of whaling originally written in Japanese which have been translated into English. They were written by sociologists Jun Morikawa and Hiroyuki Watanabe (渡辺洋之), and both of them focus on the modern whaling industry.²⁷ While these are excellent analyses of the politics and development of modern whaling, they contain very little information about the traditional whaling industry that preceded it. Anthropologist Arne Kalland first published a basic description of whaling in Fukuoka in his study of Tokugawa-era fishing

26 Jun Morikawa, *Whaling in Japan : Power, Politics and Diplomacy* (New York: Columbia University Press, 2009), 20. For authors who choose to provide their names with the family name last when publishing in English, I will give their names in that order and with the spelling they use in English. Otherwise, all Japanese names are given as family name first.

27 Ibid; Hiroyuki Watanabe, *Japan's Whaling: The Politics of Culture in Historical Perspective*, trans. Hugh Clarke (Melbourne: Trans Pacific Press, 2009).

villages, but the part about active whaling (the organized whaling groups that specialized in hunting whales) is only twelve pages of one chapter and mostly covers issues of labor and economics in the whaling groups.²⁸ Jessamyn Abel's chapter on whales and whaling in *JAPANimals* has a brief section on the importance of whaling in the 1850s, but no earlier.²⁹ Whaling historian Richard Ellis devotes a chapter of his global survey of whaling history to traditional Japanese whaling, but because he is not a historian of Japan, he seems to have drawn all of his information from the scant English-language literature on the topic.³⁰

As Japanese whaling became an international relations and environmentalist issue in the late twentieth century, more people became interested in analyses of Japanese whaling history, but most of them deal with the 20th century.³¹ Japanese pro-whaling arguments tend to reference the long, culturally-important tradition of whaling in Japan as a reason to avoid the International Whaling Commission's (IWC's) moratorium on whaling (proposed in 1982, enacted in 1986). Thus, there has been increasing interest in the earlier history of whaling in Japan, but usually as a short commentary within works focused on the issue of modern Japanese whaling.³² Also related to these contemporary debates, there have been some descriptions of traditional Japanese whaling in English especially by scientists like Hideo Omura (大村秀雄) employed by the

28 Kalland, *Fishing Villages in Tokugawa Japan*, 185-97.

29 Jessamyn Abel, "The Ambivalence of Whaling: Conflicting Cultures in Identity Formation," in *JAPANimals : History and Culture in Japan's Animal Life*, ed. Gregory M. Pflugfelder and Brett L. Walker (Ann Arbor: Center for Japanese Studies, University of Michigan, 2005).

30 Richard Ellis, *Men and Whales* (New York: Knopf, 1991) does not provide detailed source citations, but a look at the bibliography shows only English-language sources about early Japanese whaling. The most authoritative source he provides many direct quotes from is a translation of what he notes as Yamada Yosei's *Yogiotoru Eshi*, which is actually Oyamada Tomokiyo's *Isanatori ekotoba*.

31 For example, Harry N. Scheiber, *Inter-Allied Conflicts and Ocean Law, 1945-53: The Occupation Command's Revival of Japanese Whaling and Marine Fisheries* (Taipei, Taiwan: Institute of European and American Studies, Academia Sinica, 2001), and Peter Gidon Bock, "A Study in International Regulation: The Case of Whaling" (New York University, 1966).

32 Arne Kalland and Brian Moeran, *Japanese Whaling : End of an Era?*, Nordic Institute of Asian Studies Monograph Series ; No. 61 (London: Curzon Press, 1992); Abel, "The Ambivalence of Whaling," C. W. Nicol, *Taiji - Winds of Change* (Tokyo: Japan Whaling Association, 1979). Frank Hawley attempted to write a comprehensive history of Japanese whaling due to his experience with modern whalers in Japan, but never completed more than the first volume Frank Hawley, *Whales & Whaling in Japan*, Miscellanea Japonica (Kyoto: Kawakita Printing Co, 1958).

Japanese Whales Research Institute. Many of these descriptions were published in *Reports of the Whales Research Institute* or *Reports of the International Whaling Commission*. The Whales Research Institute (founded in 1947) was the forerunner of the current Institute for Cetacean Research (founded in 1987), under whose aegis Japanese "scientific whaling" in Antarctica has been conducted since the moratorium with the aid of government subsidies.³³ These reports are generally for an audience of cetologists and people related to whaling management or policy, although Richard Ellis did rely heavily on them for his description of Japanese whaling.³⁴

The debate over the moratorium on commercial whaling was probably also a motivating factor for the 1983 publication of a translation of one of the most famous works on whaling published in the Tokugawa period, *Isanatori ekotoba* (勇魚取絵詞). Unfortunately, it was produced with the help of a set of Japanese translators who used a nonstandard romanization of the title and author's name, calling it *Yogiotoru eshi* by Yamada Yosei (instead of Oyamada Tomokiyo 小山田与清).³⁵ The attached commentary by LH Matthews and G Pilleri also shows very little knowledge of the historical context of the book. For example, they say that the "ancient Japanese whaling grounds" were off Kyushu (as is noted in *Isanatori ekotoba*), without any indication of the other major whaling areas active at the same time.³⁶ The translation was also published as a supplement to *Investigations on Cetacea*, intended not for historians but for an audience of "western cetologists and conservationists among whom the ancient Japanese

33 For a detailed explanation of the Whales Research Institute/Institute for Cetacean Research's structure and ties to the Japanese government and the former commercial whaling industry in Japan, see Morikawa, *Whaling in Japan*, 37-54.

34 See the citations for Omura, H. and Ohsumi, S. in the bibliography of Ellis, *Men and Whales*, 520-1. Many of these articles were published in the *Scientific Reports of the Whales Research Institute* and in the *Reports of the International Whaling Commission*.

35 The correct romanization for both the title and author can be confirmed by the listing in the National Diet Library of Japan's catalog, which provides katakana pronunciation guides for all titles and author names.

36 L. Harrison Matthews and G. Pilleri, "Introduction to the Yugiotoru Eshi of Yamada Yosei," in *Yogiotoru eshi: Whaling in words and pictures of Yamada Yosei*, *Investigations on Cetacea* (Berne, Switzerland: Brain Anatomy Institute, 1983), 8.

whale fishery has been so little known."³⁷ It is furthermore hard to give much weight to a work which baldly offers incorrect generalizations like "until about a hundred years ago (ca. 1880) most Japanese for religious reasons refused to eat meat, but were undisturbed by any qualms of conscience about eating whale because they regarded whales as fishes."³⁸ Some of the problems with this statement are discussed in Chapter 2, but here it is enough to note that meat eating, particularly of wild game, was quite common in Japanese history.³⁹

English-language sources are, of course, not the only place where whaling information can be found. There is a much larger body of work in Japanese written about the earlier history of whaling, produced by local historians, economic historians, and by supporters of modern Japanese whaling. Local histories of individual whaling villages such as Taiji and Koza are helpful in providing detailed information about the whaling groups in that particular village, but do not offer much connection to other areas.⁴⁰ Some prefectural histories also collect information about the history of whaling, particularly if it was a major industry as it was in Wakayama and Mie Prefectures (the area covered by the former domain of Kii).⁴¹ Finally, many whaling historians have focused attention on the Saikai region of northern Kyushu, due to the large number of whaling groups there which did not fit neatly under the management of one particular village, domain, or prefecture.⁴² Some historians have focused on Tokugawa-period whaling by

37 Ibid., 12.

38 Ibid., 7.

39 See also Pieter S. de Ganan, "The Animal Economy" (Princeton University, 2011).

40 Hamanaka Eikichi, *Taiji chōshi* (Wakayama-ken Taiji-chō: Taijichō, 1979), Kushimoto chōshi hen-san iinkai, ed. *Kozachō shiryō - Hogeï hen kaiga shiryō*, Kozachō shiryō (Kushimoto-chō: Nishioka Sōgō Insatsu KK, 2008).

41 Wakayama kenshi hensan iinkai, *Wakayama kenshi. Kinsei*, vol. 4 (Wakayama-shi: Wakayama-ken, 1990); *Wakayama kenshi. Kinsei shiryō* (Wakayama-shi: Wakayama-ken, 1976). Another example of a prefectural history with a prominent section on whaling is Kōchi kenshi hensan iinkai, ed. *Kōchi kenshi*, vol. 8 Kinsei shiryō hen (Kōchi: Kōchi-ken, 1968-78).

42 The most general surveys of Saikai whaling can be found in Hirado-shi kyōiku iinkai, *Saikai geigeiki*, Hirado-shi no bunkazai (Hirado: Hirado-shi Kyōiku Iinkai, 1980); Saga kenritsu hakubutsukan, *Genkai no kujira tori: Saikai hogeï no rekishi to minzoku* (Saga: Saga kenritsu hakubutsukan, 1980); Torisu Kyōichi, *Saikai hogeigyōshi no kenkyū*, (Fukuoka-shi: Kyūshū Daigaku Shuppankai, 1993) and *Saikai hogeï no shiteki kenkyū* (Fukuoka-shi: Kyūshū Daigaku Shuppankai, 1999). There is also work on particular aspects of whaling in this

looking at the business records of whaling groups.⁴³ For example, Sueta Tomoki (末田智樹) analyzed the management of the whaling groups in Gotō domain and their link to domainal financial problems.⁴⁴ Others have focused their analyses on particular manuscripts describing aspects of whaling, such as the research done at Kyushu University by Mori Hiroko (森弘子) and Miyazaki Katsunori (宮崎克則).⁴⁵ There are fewer works that look at the history of whaling in a less specialized regional or topical manner. Fukumoto Kazuo's *Nihon hogeishiwa* (福本和夫, 日本捕鯨史話) considers a variety of aspects of historical whaling in Japan, although he does have a chapter focusing on whaling in Tosa specifically.⁴⁶ Nakazono Shigeo (中園成生) is another whaling historian whose work includes not just analysis of the development of different whaling techniques in different areas, but also consideration of the place of whaling in Japanese culture more broadly.⁴⁷ The two-part *Hogeishi* (捕鯨) by Yamashita Shōto (山下渉登) provides an even wider view of the history of Japanese whaling and how it impacted their culture. He set this

region such as Nishiura Shinsuke, "Genkainada de kiita kujira honekiri uta: Sagaken Yobuko, Iki no kujira shiseki to 'Yobuko kujiragumi' no kujira bunka fukyū katsudō," in *Kujirazuka kara mietekuru Nihonjin no kokoro II: Kujira no kioku wo tadotte Saikaiiki e*, ed. Hosokawa Takao (Tokyo: Nōrin Tōkei Shuppansha, 2012). and Tsuji Taiga, "Kaijō ippai ni hibiki wattata hazashi taiko: Nagasaki-ken shinjō Gotō-chō Arikawa no geishi ato to zenkoku kujira forum," *ibid*.

43 The most concentrated example of this is Yasushi Koga, "Saikai hogeigyō ni okeru geiniku ryūtsū: Bakumatsuki Iki konaya no hanbai kōdō wo chūshin ni [Distribution of Whale Meat in Mid-19th Century Northern Kyushu Region]," *Bulletin of the Kyushu University Museum*, no. 9 (2011). See also Takashi Fujimoto, "Geiyū no ryūtsū to chihō shiba no keisei [the Circulation of the Whaleoil and the Formation of the Local Market]," *Bulletin of the Institute of Research in Kyushu Cultural History*, no. 12 (1968), Sueta Tomoki, *Hansai hogeigyō no tenkai: Saikai hogeishi to Masutomi gumi* (Tokyo: Ochanomizu Shobō, 2004), and Andō Tamotsu, "Bunsei Tenpō shoki no Satsuma-han to Ishimotoke [on the Relations between Satsuma Clan and the Merchant Ishimoto in the Latter Edo Period]," *Shien: The journal of history* 140(2003).

44 Sueta Tomoki, "Kinsei Nihon ni okeru hogeigyō gyojō no chiikiteki shūchū no keisei katei: Saikai hogeigyō chiiki no tokushusei no bunseki," *Okayama daigaku keizai gakkai zasshi* 40, no. 4 (2009).

45 Mori Hiroko and Miyazaki Katsunori, "Tenpō sannen 'Isanatori Ekotoba' hankō no haikai (the Publication of 'Isanatoriekotoba' (Whaling Picture) in the Edo Period)," *Bulletin of the Kyushu University Museum* 8(2010); Mori Hiroko and Miyazaki Katsunori, "Bunka 5, Ōtsuki Seijun 'Geishikō' seiritsu no seijiteki haikai," *Seinan gakuin daigaku kokusai bunka ronshū* 25, no. 2 (2011).

46 Fukumoto Kazuo, *Nihon hogeishiwa: Kujiragumi manyufakuchua no shiteki kōsatsu wo chūshin ni*, vol. 83, Kyōyō Sensho (Tōkyō: Hōsei Daigaku Shuppankyoku, 1993), 1-2.

47 Nakazono Shigeo, *Kujira tori no keifu: Gaisetsu Nihon hogeishi* (Nagasaki-shi: Nagasaki Shinbunsha, 2001). He also speaks about culture more specifically in his analysis of whaling scrolls in Nakazono Shigeo and Yasunaga Hiroshi, *Kujiratori emonogatari* (Fukuoka-shi: Gen Shobō, 2009).

history in the context of global whaling, in part because he wanted to better understand the opposition to Japan's modern whaling industry.⁴⁸

While Yamashita included a discussion of whaling culture in his work because of the modern whaling problem (*hogeï mondai* 捕鯨問題), or opposition to Japanese commercial whaling on the part of foreign environmentalists, his history is relatively even-handed. Other books focusing on traditional and modern Japanese whaling can be far more blatantly concerned with supporting the pro-whaling side of the problem. Kondo Isao's *Nihon engan hogeï no kōbō* (近藤勲, 日本沿岸捕鯨の興亡) is a collection of primary sources about whaling, with very little added analysis but still quite useful for historians. Written by a former whaler, this book was intended to preserve the information still available about whaling "as evidence of those living in the whaling world for the sake of future generations."⁴⁹ His concern about losing essential experience of whaling history was directly tied to the constraints put on commercial whaling under the IWC's moratorium. An even clearer example of the ways that whaling history can be inextricably tied to the modern pro-whaling agenda appears in the works of one of the most prolific authors writing about the history of whaling in Japan, former Ministry of Agriculture, Forestry and Fisheries official Komatsu Masayuki (小松正之). He was one of the people who helped plan the current scientific whaling program in Japan, and argues to a popular audience in his books about the importance of whaling in Japanese culture as part of his agenda to keep modern whaling alive in Japan.⁵⁰ With such a strong bias towards highlighting the

48 Yamashita Shōto, *Hogeï I, Mono to ningen no bunkashi* 120 (Tokyo: Hōsei Daigaku Shuppankyoku, 2004), iii-x.

49 Kondō Isao, *Nihon engan hogeï no kōbō* (Kokubunji-shi: San'yōsha, 2001), 5.

50 Some examples of his publications include Komatsu Masayuki, *Kujira sono rekishi to bunka* (Tōkyō: Goma Shobō, 2005), *Yoku wakarū kujira ronsō: Hogeï no mirai wo hiraku*, vol. 22, Berusō Bukkusū (Tōkyō: Seizandō Shoten, 2005), *Kujira sono rekishi to bunka* (Tōkyō: Goma Shobō, 2005), and *Rekishi to bunka tanbō: Nihonjin to kujira* (Tokyo: Goma Shobō, 2007), *Kujira to sanpo: Edo Tōkyōwan kara Bōsō • Miura hantō wo tazunete hōjō no umi* (Tokyo: Gomashobō, 2004), 102-8, even has six pages listing places where one can buy whale meat today. See also Dennis Normile, "Japan's Scientific Whaling: An Expensive Proposition," *Science News* (2013) at <http://news.sciencemag.org/people-events/2013/02/japans-scientific-whaling-expensive-proposition>, accessed

importance of whaling in Japan today, his books can exaggerate continuities with the past instead of demonstrating changes within whaling practices, attitudes towards whaling, or uses of whales.⁵¹

The history of whaling, is, of course, an important part of any history looking more broadly at the interactions between humans and whales (see Chapter 1). However, in order to move away from the particular agendas of these histories of whaling, my research shifts from looking at just the people who were hunting whales, to considering the whales themselves and where they ended up. This division is somewhat difficult to sustain, since most of the information that we have today on the historical habits and distribution of whale populations comes from whaling data. For the populations of whales which migrated along the Japanese coast, our best information is only available where they passed by Japanese whaling groups, and their movements outside of Japanese waters are only vaguely known, if at all. Detailed information on migration patterns throughout the Pacific basin is still lacking. Even so, an introduction to the information about whales appearing near Japan today, even if it relies on information mostly from twentieth-century cetologists and whaling data, at least provides a basic framework for understanding the historical whales of early modern Japan.

Whales of the Northwest Pacific

Biologists today divide whales into two suborders within the order Cetacea: the baleen whales are Mysticeti, the toothed whales (and smaller dolphins and porpoises) are Odontoceti.

December 9, 2013.

51 For example, in both Komatsu Masayuki, *Kujira sono rekishi to bunka* and *Yoku wakarū kujira ronsō: Hogeī no mirai wo hiraku*, 22, he begins with evidence that the people of the Jōmon period hunted whales in some fashion, even though this was at least 2000 years before the appearance of organized whaling groups in Japan and there is no evidence of a continuous whaling practice in the intervening time. See also Takahashi Jun'ichi, *Kujira no Nihon bunkashi: Hogeī bunka no kōseki wo tadoru*, Nihon bunka no kokoro • sono uchi to soto (Kyoto: Tankōsha, 1992).

This division reflects a distinction easily made even before whales were classified in the Linnean system, because there is a clear difference between whales with baleen plates on their jaws and ones with recognizable teeth. The sperm whale (*Physeter macrocephalus*) is the largest toothed whale, and is found throughout the Pacific, sometimes approaching Japan's coasts. The other major whale species found in Japanese coastal waters today are baleen whales, including the rorqual family's humpback whales (*Megaptera novaeangliae*), fin whales (*Balaenoptera physalus*) and sei whales (*Balaenoptera borealis*).⁵² Although their populations are now greatly diminished, both North Pacific right whales (*Eubalaena japonica*) and gray whales (*Eschrichtius robustus*) also used to be found regularly in Japanese waters (Fig i.1). The general trend for all migratory whales is to spend summers in more polar latitudes, where food is richer, and winters in the warmer waters closer to the equator where they give birth. For whales migrating through Japanese waters, this means they are most likely to be seen in the winter, and to head north to Arctic waters for the summer.

Right whales are large, dark whales with distinctive lighter patches of rough skin called callosities on their heads. They reach an average of 45-55 feet (13.7-16.6 m) as adults and can weigh up to 70 tons.⁵³ As with all right whale species, North Pacific right whales were the "right" whale for whalers to catch, and thus are far less abundant today than they used to be. They are

52 There is some uncertainty about whether the whales which are referred to as *iwashi kujira* in Japanese historically were actually all sei whales, although that is the correct translation for the name today. Even into the mid-twentieth century, Bryde's whales and possibly also Omura's whales (*Balaenoptera omurai*) were counted as Sei whales in catch and sighting records. Hideo Omura, "Review of the Occurrence of Bryde's Whale in the Northwest Pacific," *Reports of the International Whaling Commission* Special Issue 1: Report of the Special Meeting of the Scientific Committee on Sei and Bryde's Whales, La Jolla, California, December, 1974(1977), S.B. Reilly et al, "*Balaenoptera edeni*," ed. IUCN 2013, vol. Version 2013.2, *IUCN Red List of Threatened Species* (2008), www.iucnredlist.org and "*Balaenoptera borealis*," ed. IUCN 2013, vol. Version 2013.2, *IUCN Red List of Threatened Species* (2008), www.iucnredlist.org.

53 Ben Wilson and Angus Wilson, *The Complete Whale-Watching Handbook : A Guide to Whales, Dolphins, and Porpoises of the World* (St. Paul, Minn.: Voyageur Press, 2006), 70-1. See also NOAA Fisheries Office of Protected Resources, "North Pacific Right Whale (*Eubalaena japonica*)," (2013) for an overview of basic information on right whales.

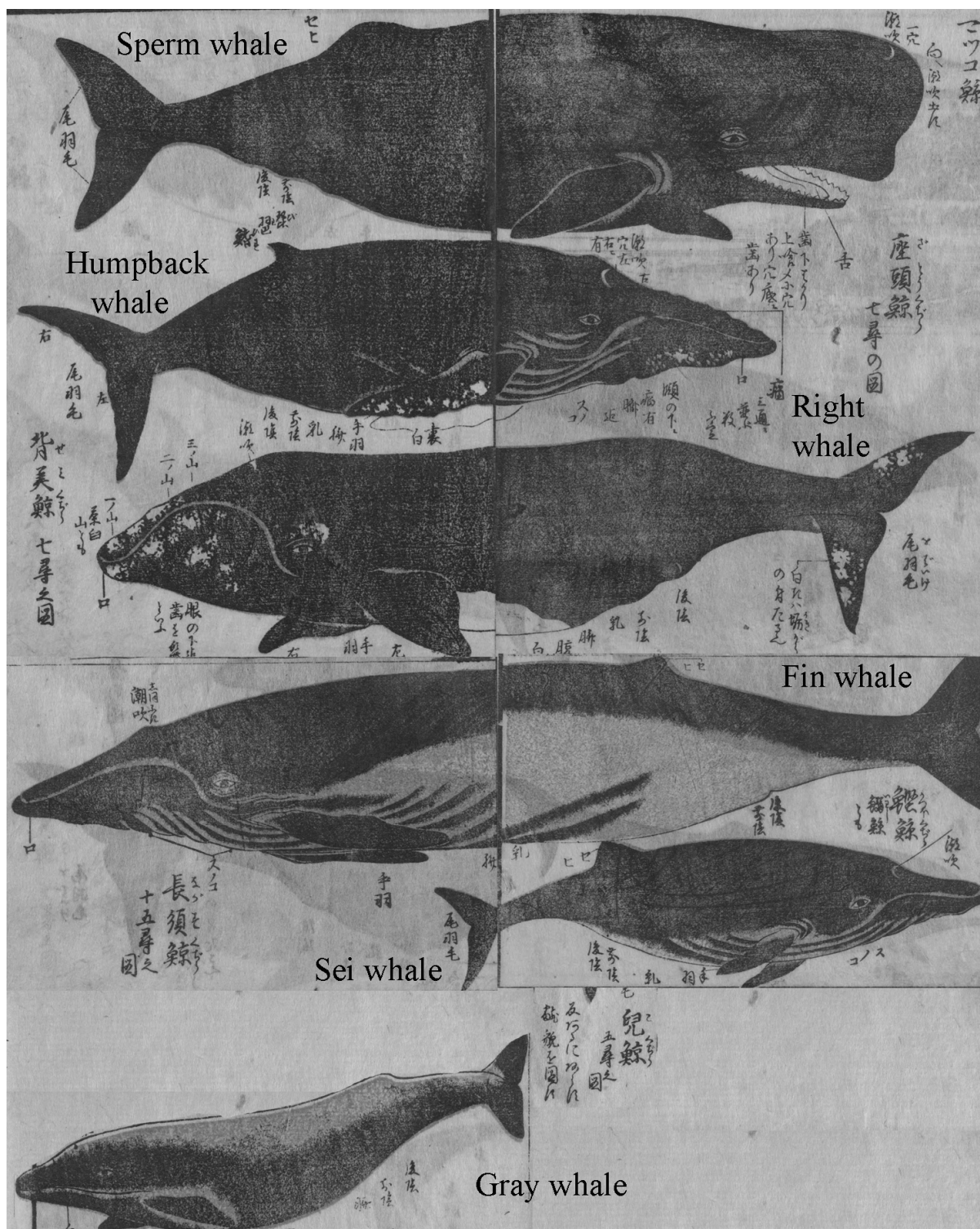


Figure i.1: Major whale species found near Japan (not entirely to scale). From top to bottom: sperm, humpback, right, fin, sei, and gray whale. This illustration is a composite from three pages of Ōkura Nagatsune's *Jokōroku* (discussed in chapter 2), in a non-consecutively numbered section which is pages 23-25 of the National Diet Library's digital version.

categorized as Endangered (for the western population) and Highly Endangered (for the eastern population) on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species.⁵⁴ Right whales are slow-moving, since they are unique in feeding by skimming along the surface of the water with their mouths open. Because they do not take in one large mouthful of water and then press out the water to keep only the prey smashed against their baleen, they do not have the long throat grooves that other baleen whales (with the exception of gray whales) use to expand the capacity of their mouths like an accordion. Also, unlike other whales, they float rather than sink when killed, making them easy for whalers to catch and keep. North Pacific right whales may have winter offshore breeding grounds rather than gathering in shallow coastal waters, but the exact location of these grounds is unknown. In the past, North Pacific right whales would summer in the waters from the Sea of Okhotsk to the Bering Sea and the Gulf of Alaska, and winter in breeding grounds somewhere between the Sea of Japan, the Taiwan Strait, and the Bonin Islands. The current population of western North Pacific right whales is found in the Sea of Okhotsk and is estimated to be only around 400 whales, while the eastern North Pacific population in the Bering Sea is even smaller at only 30 whales.⁵⁵ Even if the current breeding ground for these whales were known, that would not preclude other sites having been used by the historically much larger population of over 30,000.⁵⁶ The two

54 This determination was made in 2008 S.B. Reilly et al, "*Eubalaena japonica*," ed. IUCN 2013, vol. Version 2013.2, *IUCN Red List of Threatened Species* (2008), www.iucnredlist.org.

55 The western population was estimated at around 400 individuals in 2008 Ibid. Details on the eastern population are provided by Paul R Wade et al, "The World's Smallest Whale Population?," *Biology Letters* 7(2011).

56 The entire Pacific population in 2008 was estimated to be around 500 individuals Reilly et al, "*Eubalaena japonica*." The initial population of North Pacific right whales must have been more than the amount taken out by whalers from 1839 to 1909, since the species is not yet extinct today. Scarff estimates 26,500-37,000 individuals taken by whalers (including ones hit by harpoons but lost rather than brought back to the whaling ship) in this period J. E. Scarff, "Historic Distribution and Abundance of the Right Whale (*Eubalaena glacialis*) in the North Pacific, Bering Sea, Sea of Okhotsk and Sea of Japan from the Maury Whale Charts. (Iwc Sc/42/Ps-3)," *Annual Report. International Whaling Commission* 41, no. Journal Article (1991).

endangered populations are no longer in contact with each other, but that may be an artifact of the extreme reduction in population size brought on by intense whaling pressure.⁵⁷

Gray whales, as the name would suggest, are a mottled grayish whale. They are on average slightly smaller than right whales, reaching an adult length of 50 feet (17 m) and weight of 40 tons.⁵⁸ Gray whales, unlike other baleen whales which filter-feed in surface waters, primarily feed on the bottom of shallow continental shelf waters. This habit limits them primarily to coastal areas, divided into two subpopulations of eastern gray whales (summering in the northern Bering in Chukchi Seas) and western gray whales (summering in the Sea of Okhotsk). The eastern subpopulation has a stable population of around 20,000 and is a species of Least Concern on the IUCN Red list, but the western subpopulation is not in contact with the eastern one and is listed as Critically Endangered with an estimated population in 2006 of only 113-131 individuals.⁵⁹ This western subpopulation summers mainly off the northeast coast of Sakhalin Island, sometimes off the eastern coast of Kamchatka. Their exact migration routes and wintering grounds are still unknown, although their calving grounds may be around Hainan Island at the southernmost end of their range. They used to be seen and hunted around Korea in the winter, particularly in December-January and March-April. This pattern likely indicates migration south and north through the Sea of Japan, at least until their near-extinction in these waters by 1968.⁶⁰ From the Seto Inland Sea, they were likely to have migrated along the Pacific coast of Japan, and

57 Reilly et al, "*Eubalaena japonica*," Phillip J. Clapham et al, "Distribution of North Pacific Right Whales (*Eubalaena japonica*) as Shown by 19th and 20th Century Whaling Catch and Sighting Records," *Journal of Cetacean Research and Management* 6, no. 1 (2004).

58 Wilson and Wilson, *The Complete Whale-Watching Handbook*, 72-3; NOAA Fisheries Office of Protected Resources, "Gray Whale (*Eschrichtius robustus*)," (2013).

59 S.B. Reilly et al, "*Balaenoptera physalus*," ed. IUCN 2013, vol. Version 2013.2, *IUCN Red List of Threatened Species* (2013), www.iucnredlist.org.

60 Robert L. Jr Brownell and Chan-il Chun, "Probable Existence of the Korean Stock of the Gray Whale (*Eschrichtius robustus*)," *Journal of Mammalogy* 58, no. 2 (1977), Reilly et al, "*Balaenoptera physalus*."

there also are contemporary records of sightings along the eastern Japanese coast to support this supposition that migration routes went along both sides of the archipelago.⁶¹

Humpback whales are a baleen whale with very large pectoral fins, marked with individually distinctive amounts of white. The lower surface of the tail flukes is also patterned with white. When feeding, they take in a large mouthful of water, expanding the characteristic throat grooves possessed by all rorquals into a rounded pouch. By compressing this extra skin with their mouth mostly closed, they filter water out through their baleen while keeping zooplankton or small fish in their mouth to be eaten. They can reach a length of up to 60 feet (18 m) and weigh 25-40 tons.⁶² They are famous for the complex songs the males sing on their wintering grounds, as well as being popular whale-watching species in areas where they are regularly found.⁶³ Humpback whales globally have been doing well enough to have their category shifted from Threatened in 1996 to a Species of Least Concern by the IUCN Red List in 2008, with a total population over 60,000. However, the western North Pacific subpopulation makes up only around 1,000 out of the approximately 18,000 humpbacks in the entire Pacific (as of 2006). The western North Pacific subpopulation is the one which migrates along the Japanese coast. They winter around Okinawa, the Bonin Islands, and the Phillipines, and spend summers off Kamchatka, the Aleutian Islands and in the Bering Sea.⁶⁴

61 Reilly et al, "Balaenoptera physalus;" Hideo Omura, "Possible Migration Route of the Gray Whale on the Coast of Japan," *Scientific Reports of the Whales Research Institute, Tokyo* 26(1974) and "Distribution and Migration of the Western Pacific Stock of the Gray Whale," *Scientific Reports of the Whales Research Institute, Tokyo* 39, no. March (1988).

62 Wilson and Wilson, *The Complete Whale-Watching Handbook*, 80-1, NOAA Fisheries Office of Protected Resources, "Humpback Whale (*Megaptera novaeangliae*)," (2013).

63 D. Graham Burnett, *The Sounding of the Whale: Science and Cetaceans in the Twentieth Century* (Chicago: University of Chicago Press, 2012) discusses the way in which whale songs became part of late twentieth-century environmental movements.

64 S.B. Reilly et al, "Megaptera novaeangliae," ed. IUCN 2013, vol. Version 2013.2, *IUCN Red List of Threatened Species* (2008), www.iucnredlist.org.

Fin whales are the second-largest whale on earth, reaching an average of 75 feet (22 m) and between 40 and 80 tons.⁶⁵ They are sleek dark whales with lighter bellies and a distinctive white right jaw. Fin whales were rarely hunted until the modern era due to their speed: they cruise at 5-8 knots (9-14 km/hour) and can sprint up to 20 knots (37 km/hour).⁶⁶ With the advent of engine-driven commercial whaling ships, they were heavily targeted, and are now listed as Endangered on the IUCN Red List. Fin whales are generally found in offshore waters. There is some seasonal shift in their distribution in the Pacific, but not as much as with more regularly migratory species. In the summer, they may be found throughout the North Pacific above 40°N latitude (at about the level of the northern tip of Honshu). They also have a subpopulation in the East China Sea which may have been the source of the many fin whales targeted by whalers around Korea and Japan in the twentieth century.⁶⁷

The other dark rorquals found around Japan are generally described in whaling records as *iwashi kujira* (鯨鯨), which is the current name for sei whales.⁶⁸ They have this name of "sardine whales" because they feed on young schooling fish such as sardines, anchovies and mackerel.⁶⁹ However, sei whales are very similar to Bryde's whales (*Balaenoptera edeni*), reaching a similar average length of just under 50 feet (sei whales) or 43 feet (Bryde's whales). They are most

65 NOAA Fisheries Office of Protected Resources, "Fin Whale (*Balaenoptera physalus*)," (2013).

66 N. Bose and J. Lien, "Propulsion of a Fin Whale (*Balaenoptera physalus*): Why the Fin Whale Is a Fast Swimmer," *Proceedings of the Royal Society of London. Series B, Biological Sciences* 237, no. 1287 (1989). For comparison, the record speed of clipper ships, the fastest sailing ships of the nineteenth century, was 22 knots (45 kilometers/hour), and the average speed much lower Jane D. Lyon, *Clipper Ships and Captains* (New York: American Heritage Publishing, 1962).

67 Reilly et al, "*Balaenoptera physalus*."

68 In modern Japanese, species names are given in katakana, so the current name for sei whales is technically イワシクジラ. However, this is a relatively recent shift away from using kanji and tends to be more apparent in works trying to provide scientifically accurate species names: Torisu Kyōichi, *Saikai hoge no shiteki kenkyū* does not use katakana whale names, but Ishii Atsushi, ed. *Kaitai shinsho "Hoge ronsō"* (Tokyo: Shin Hyōron, 2011) does. Therefore, I will provide kanji rather than katakana for whale names.

69 Takahisa Nemoto and Akito Kawamura, "Characteristics of Food Habits and Distribution of Baleen Whales with Special Reference to the Abundance of North Pacific Sei and Bryde's Whales," *Reports of the International Whaling Commission Special Issue 1: Report of the Special Meeting of the Scientific Committee on Sei and Bryde's Whales*, La Jolla, California, December, 1974(1977): 87.

distinguishable by the number of ridges on their head: one for sei whales, three for Bryde's, but this distinction requires relatively close observation. Bryde's whales were also counted as "sardine whales" by Japanese whalers before 1972.⁷⁰ In fact, cetologist Hideo Omura noted that pictures of *iwashi kujira* from early modern Japan seem to have been Bryde's whales, based mostly on the longer throat grooves that Bryde's whales have.⁷¹ Sei whales migrate into subpolar waters above 40°N in the summer and down to subtropical waters in the winter, although the wintering grounds are not known. Bryde's whales prefer slightly warmer water and therefore do not migrate as far north as sei whales, being found regularly in the winter off the Bonin Islands, western Kyushu and Wakayama by modern Japanese whalers.⁷²

The sperm whale is the largest Odontocete and the only toothed whale which was also regularly called a whale (*kujira* 鯨; sperm whales are *makkō kujira* 抹香鯨) in early modern Japan. They are a dark brown or gray whale with a distinctively-shaped blocky head which contains the sperm oil so prized by American whalers. Males can reach 59 feet (18 m) long, while females only reach an average of 35 feet (11 m). They subsist on deep-sea squid, and although they have teeth in their thin lower jaw, they generally simply inhale their prey through suction rather than relying on their teeth. They were not specifically targeted by Japanese whalers before the twentieth century because they are deep-sea whales not often found in shallow coastal waters, but they could be found along the Pacific coast and were sometimes hunted if they came close enough to shore.

Such modern information about whale populations is a useful starting point for determining what a history of whales might need to include. However, even if we can identify

⁷⁰ Reilly et al, "*Balaenoptera edeni*."

⁷¹ Omura, "Review of the Occurrence of Bryde's Whale in the Northwest Pacific," 98.

⁷² Reilly et al, "*Balaenoptera borealis*," Nemoto and Kawamura, "Characteristics of Food Habits and Distribution of Baleen Whales," 82.

which species of whales early modern Japanese whalers and others were most likely to interact with, current categories of species and modern ideas about these whales' biology did not necessarily apply. What exactly was a whale, to the people of early modern Japan?

What Was a Whale?

Whales are an enigma. It is difficult to pin them down because they straddle taxonomic categories. Children still have to be taught today that whales are not fish, but rather mammals more related to cows than to sharks. Even though mammals were not one of the classifications for animals in the Edo period, Japanese scholars still had trouble finding a category for them. Whales were difficult not just because of their extraordinary size, but rather because they were peculiar sorts of fish, with meat more like wild boar or deer than herring or tuna, and with features that did not match up well with other types of fish.

With this difficulty in mind, just what was a whale? Today, whales are all classified as mammals of the Order Cetacea, but so are dolphins and porpoises. The line between them is made through a somewhat arbitrary impression of size: the average person would say that the distinction is that dolphins are much smaller than whales. However, there are many lesser-known small whales that are very close to the same size as other species known as dolphins. Dolphins are of the Family Delphinidae, but so are killer whales (*Orcinus orca*) and pilot whales (*Globicephala spp.*), which -- as is obvious from the names -- are generally considered small whales. The difficulty of making the distinction between a smallish whale or large dolphin is clear in a comparison of the similarly-sized Risso's dolphins (*Grampus griseus*; up to 13 feet or 4 m), and the Beluga whale (*Delphinapteras leucas*; 13-16 feet or 4-5 m).⁷³ It is not merely a case of dividing the two at approximately 4 meters long: melon-headed whales (*Peponocephala*

⁷³ Wilson and Wilson, *The Complete Whale-Watching Handbook*, 66-7.

electra) only reach 9 feet long (2.7 m).⁷⁴ The division in modern Japanese is also based on a rough categorization by size, but the line is not drawn in exactly the same place as it is in English. *Kujira* are whales, including toothed whales of the family Delphinidae over about five meters long, whereas smaller Cetacea are considered *iruka* (海豚).⁷⁵ However, the two subfamilies of Delphinidae which include pilot whales (Globicephalinae) and killer whales (Orcininae) are referred to as *gondō* (巨頭) rather than *iruka*, and killer whales themselves are often set apart as simply *shachi* (鯨). For my purposes, the fact that neither "whale" nor "*kujira*" is a strictly defined category means that, when I refer to whales in general, I mean larger Cetacea. I will specify which species if it is important to note the inclusion or exclusion of borderline cases like pilot whales and killer whales. I am considering here the interactions with a broad category of animals rather than one particular species, so the fact that there is not exact overlap between Japanese and English definitions, or even the fact that there is often no consensus between scientific and lay understanding of what is included in the category of whale or dolphin is not a problem.

Classification of whales only becomes more complex historically, since the identification of whales as mammals is a relatively recent innovation.⁷⁶ In early modern Japan, the question of how to categorize whales generally fell upon scholars of Japanese natural history or *honzōgaku* (本草学). This field of study was based on categories from Chinese materia medica (see Chapter 3 for more discussion of whales and *honzōgaku*). Whales were listed in the category of oceanic

74 NOAA Fisheries Office of Protected Resources, "Melon-Headed Whale (*Peponocephala electra*)," (2012).

75 Nihon daijiten kankōkai dainihan henshū iinkai and Shōgakkan kokugo jiten henshūbu, eds., *Nihon kokugo daijiten*, 2nd ed. (Tokyo: Shōgakkan, 2000-2002), in the definitions for *kujira* and *iruka*, says there is no clear distinction between whales and dolphins, then gives definition for whales starting around 5 meters. Dolphins are <5m. Accessed through the Japanknowledge+ database, <http://www.jkn21.com/top/corpdisplay> on January 2, 2014.

76 For a detailed view of the process of introducing whales as mammals instead of fish in the American context, see D. Graham Burnett, *Trying Leviathan: The Nineteenth-Century New York Court Case That Put the Whale on Trial and Challenged the Order of Nature* (Princeton: Princeton University Press, 2007).

fish in Chinese materia medica texts like the *Bencao ganmu* (本草綱目) and the Japanese *honzōgaku* texts inspired by them, such as Kaibara Ekiken's *Yamato honzō* (貝原益軒, 大和本草). Ekiken's section on marine fish includes regular fish like sea bream, yellowtail, and bonito, but also sharks, blowfish, octopus, squid and jellyfish. Whales appear in this section under the euphemistic heading of "ocean loach." Ekiken describes references to whales from earlier texts under the more common names of *isana* (勇魚) and *kujira*, and points out that they range in size from a length of 10 *li* to a few *jō*. This seems to translate to a size range of immeasurably large (one *li* is 3.9 kilometers in modern measurement) down to approximately 6 meters or so.⁷⁷ In contrast, dolphins (*iruka*) appear much later in the section on ocean fish. They do have some links to whales, as Ekiken describes them having the same coloring and taste as whales, but he also compares them to unrelated animals like pigs and a fish called a sayori or halfbeak.⁷⁸ In his classification, dolphins are only 1 *ken* (間, 1.8 meters) long.⁷⁹ Because the ambiguous size division between small dolphins and large whales holds for both the early modern period and today, and because whales are by far the more influential, I will leave dolphins out of my discussion and focus on whales rather than all forms of Cetacea.

But what was a whale to people who were not specifically natural history scholars? Even outside of *honzōgaku* scholarship, whales fell into broad categories with other strange creatures that did not match up with normal fish. Terajima Ryōan's *Wakan sansai zue* (寺島良安, 和漢三才図会), a 1712 encyclopedia using Chinese materia medica but also other sources to classify Japanese minerals, plants and animals, put them under scaleless oceanic fish. This was a rather catchall category for weird types of marine "fish" like whales, sharks, and eels. It also included

⁷⁷ Kaibara Ekiken, *Yamato honzō*, in *Ekiken zenshū*, ed. Ekikenkai (Tokyo: Ekiken zenshū kankōbu, 1911 (1709)), p 333.

⁷⁸ The dolphin is said to have the same shape as a pig, and its beak or rostrum is compared to that of the sayori, *Hyporhamphus sajori*.

⁷⁹ Ekiken, *Yamato honzō*, p 344.

some scaled fish whose less typical features apparently overrode the consideration of whether they had scales or not, such as swordfish.⁸⁰ *Wakan sansai zue* combines information from a wide variety of sources in describing whales and their uses, so it is probably the most comprehensive source for answering the question of what a whale was to people in the Edo period. In this work, Ryōan not only lists off the Chinese classifications of materia medica, but also attempts to match native Japanese plants and animals with the Chinese ones (See Chapter 3). He begins with a brief description of whale folklore, which says that a great whale lives in a hole in the ocean floor, and by moving in and out of this home it produces tides.⁸¹ But after this introduction to legendary whales, Ryōan focuses on the different parts of whales, and then describes the six main Japanese whale species. All six of these were targets for whaling, and the breakdown into parts and also the descriptions of whale species both reflect this. He indicates how good a target they were, beginning with the favored right whale which produced the most oil.⁸² Even including the legends, his is a very practical way of considering whales: what do they do which might affect people, and how can they best be used by people?

Ryōan's entry on whales reflects a common division into the six major whale species which are still recognizable as the important migratory species along Japanese coasts today, at least for the species which have not been severely depleted by modern whaling. There are a number of scrolls from the Edo period which illustrate different types of whales, sometimes including dolphins or strange fish like hammerhead sharks. While some of these are simply called something like "Illustrated whale scroll" (*Kujira emaki* 鯨絵巻), a particularly high-quality example called *Rokugei no zu* (六鯨之圖; Diagram of six whales) illustrates the

80 Terajima Ryōan, "Wakan sansai zue," in *Tōyō bunko* 471, ed. Shimada Isao, Takeshima Atsuo, and Higuchi Motomi (Tōkyō: Heibonsha, 1712), 198-258.

81 Ibid., 198-99.

82 Ibid., 201.

conceptualization of six major whale species found in Japanese waters. One interesting thing about *Rokugei no zu* is that it actually illustrates more than just the six major whales. The six listed in the table of contents are the right whale (*semi kujira* 背美鯨), humpback whale (*zatō kujira* 座頭鯨), sperm whale (*makkō kujira*), gray whale (*kokujira* 兎鯨 or *kokukujira* 克鯨), fin whale (*nagasu kujira* 長須鯨), and sei/Bryde's whale (*iwashi kujira*), but there are also drawings of two types of pilot whales (*gondō*), a dolphin of some kind, and a killer whale (*shachi*).⁸³

Thus, even though six seems to have been the conventional count of Japanese whales, there was a recognition that other animals could be thought of in the same category. A later comprehensive work on whaling from the Meiji period, Fujikawa Sankei's *Hogeï zushiki* (藤川三溪, 捕鯨圖識), emphasizes the complexity of classifying the major whale species in Japan. In his reference to earlier classifications, Fujikawa points out that the number of species in any given author's notion of "whales" varied between five and twenty-six. Fujikawa then provides information about eleven whales: sperm whales, right whales, fin whales, humpback whales, gray whales, sei whales, Baird's beaked whales (*tsuchi kujira* 槌鯨), killer whales, pilot whales, a *katsuo kujira* (鰹鯨) which might be a reference to Bryde's whales as distinct from sei whales, and some kind of small toothed whale.⁸⁴ With this variety of different species to choose from, I will focus mostly on the larger whales targeted by early modern whalers, leaving aside species on the fuzzy border between dolphins and whales (such as killer whales and pilot whales).

83 Beiga, "Rokugei no zu," (National Diet Library, Japan, 1847). This scroll and other illustrations of whale species will be discussed in more detail in chapter 3.

84 Fujikawa Sankei, *Hogeï zushiki* (Kobe: Inoue Shinkōdō, 1888). See also Omura, "Review of the Occurrence of Bryde's Whale in the Northwest Pacific."

Why Whales?

Clearly, with a number of scrolls and other references describing whales circulating in the Edo period, people were interested in knowing something about these unusual fish. But why should historians today want to focus on whales in early modern Japan? Whales are more than just an example of something from the marine environment that people were known to have interacted with. Whales actually have a startling tendency to appear in unusual places and thus provide a new perspective on broader issues in the history of Japan. Whales were part of the development of novel resources, scientific classification systems, and medical knowledge, as well as appearing as individuals in human religious ceremonies. Just as whales existed at the intersection of classifications, with features of both land and sea creatures, whales were also a nexus in a web of linkages between the ocean and the shore. By focusing on whales and the boundaries they straddle, my research highlights the often surprising interconnections between coastal activities and inland life in early modern Japan. Complex coordination and intensive capital investment were required to hunt whales, making early modern whaling a substantial enterprise employing sometimes thousands of people, and contributing significantly to the economy (Chapter 1). Many everyday objects not obviously derived from marine sources - pesticides used on rice crops, flexible springs necessary to drive the action of theater puppets and clockwork dolls - were made from whale parts. Chapter 2 looks at this material connection between whale products and terrestrial life. Whaling and whale products also had a strong intangible impact on the imagination, most visible in the fact that whales were the only nonhuman animals for which there are detailed anatomical diagrams in this period of Japan's history. Chapter 3 examines the ways in which whales drew scientific and popular curiosity far beyond the coastal villages where they were hunted.

There were even, as discussed in Chapter 4, religious ceremonies for dead whales closely resembling those for deceased humans. With whale graves, memorial services and death registers, whales were metaphysically treated like humans. The boundaries between humans and other inhabitants of the natural world were thus not as simple as people on one side, animals on the other. Finally, the last chapter considers how this network of influences was particular to the early modern period. The late nineteenth-century move to modern, pelagic whaling altered the role of whales dramatically as whalers moved into new environments away from the Japanese coast. The study of whales illuminates how, in the Japanese archipelago, the sea and the land were profoundly intertwined. By focusing on whales as one of the more prominent sources of ties between the marine and the terrestrial environment, this dissertation illustrates the richly textured diversity of that connection.

Chapter 1

Whaling Villages and Whale Migration: Ties Between Whales and Whalers in Early Modern Japan

The Landscape and Seascape of Early-Modern Whaling

Organized whaling in the early modern period had four major centers. The Kumano area, including the Pacific coast side of modern Wakayama Prefecture and adjacent parts of Mie Prefecture, was under the governance of Kishū or Kii domain (Figure 1.1). The east and west sides of Tosa Bay, modern Kōchi Prefecture (formerly Tosa domain) made up the second whaling region. The Saikai area of northwestern Kyushu was another, including the Gotō islands, Ikitsukishima, Iki and Tsushima (under the management of various Prefectures today, and various domains in the early modern period). The last major area was around Kayoi, on the Japan Sea side of Yamaguchi Prefecture (then Chōshū domain; Figure 1.2). Because whales tended to follow major currents, all four of these areas are situated along coastal whale migration routes: Tosa and Kumano along the Kuroshio current, and Saikai and Chōshū along the Tsushima current (Figure 1.3). Whaling villages were located out on the ends of peninsulas and islands far from the areas of intensive rice farming that literally formed the financial basis of the Tokugawa economy. Their inhabitants generally relied on various forms of fishing, in part because there was very little arable land nearby to farm. This distance from the rice-growing activity central, at least in theory, to the Tokugawa order makes it easy to imagine whaling villages as marginal. Even today, these places are at the far edges of the transportation grid. The Kumano coast has one slow local train line which occasionally has to suspend operations due to high winds or landslides washing out the tracks.¹ The whaling village of Muroto in current-day Kōchi

¹ For example, part of the line including Koza and Taiji was destroyed by landslide following typhoon 12 on September 14, 2011 and part of it remained closed until the beginning of December. High wind suspensions of some trains and delays in service were announced, for example, on February 1, 2012. See JR West websites http://www.westjr.co.jp/press/article/2011/09/page_765.html and

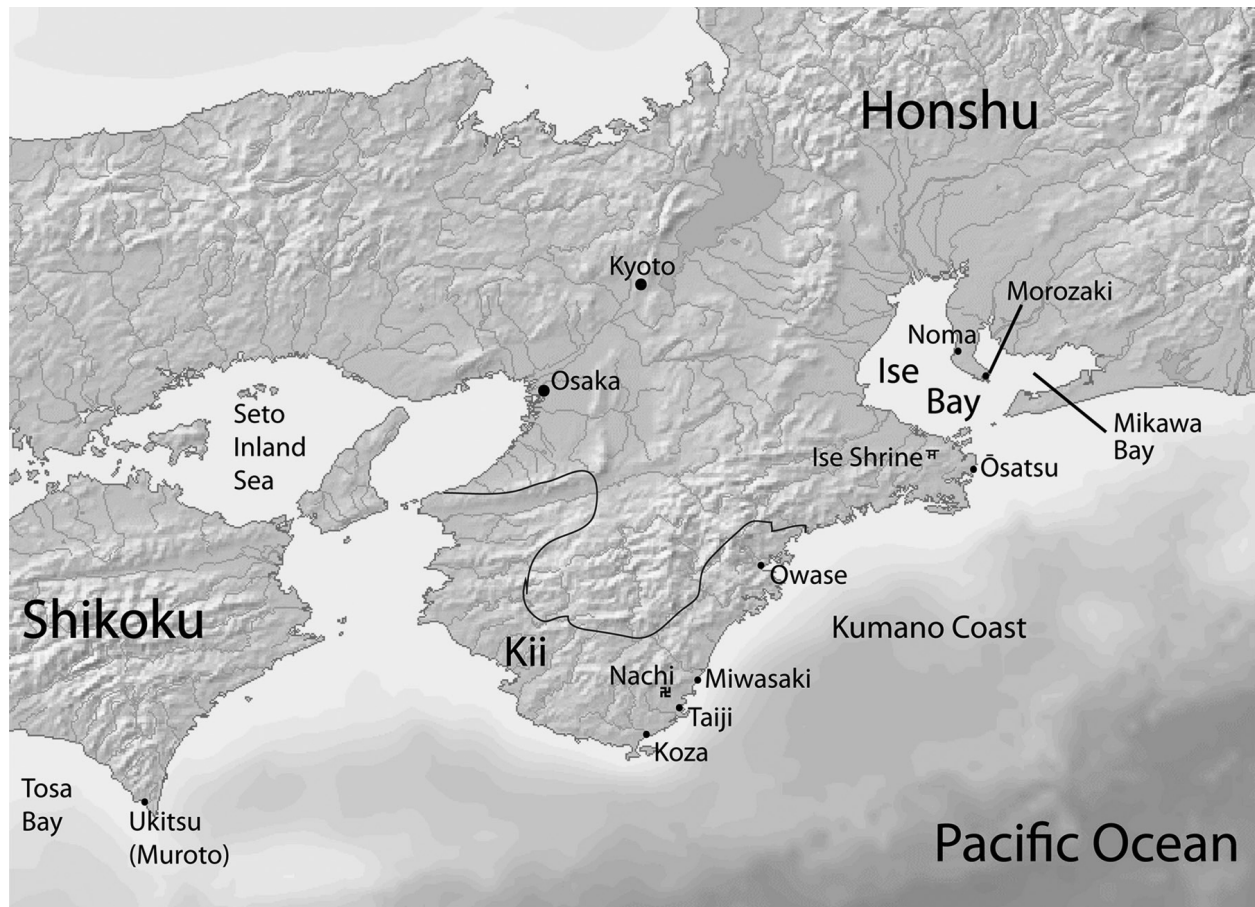


Figure 1.1: Villages and other landmarks in the whaling areas of Ise and Mikawa Bays as well as the Kumano area on the Kii peninsula.

Prefecture lies within the one remaining section of Shikoku's coastline without rail service, although there is bus access along the road linking former villages into the current Muroto city designation, an administrative area which covers the whole peninsula. The whaling villages in the Saikai region of northern Kyushu are mostly on islands accessible only by relatively infrequent ferries and, in the case of the Gotō islands, Iki, and Tsushima, light aircraft. Since the construction of a bridge in the 1960s, the village of Kayoi in Yamaguchi Prefecture can be accessed by bus from the station in Nagato city (to which it technically belongs), but it is certainly not the center of town, nor is Nagato a major travel destination for the Prefecture. But

http://www.westjr.co.jp/press/article/2011/11/page_1032.html for landslides;
http://trafficinfo.westjr.co.jp/kinki_history_detail.html?id=00006944

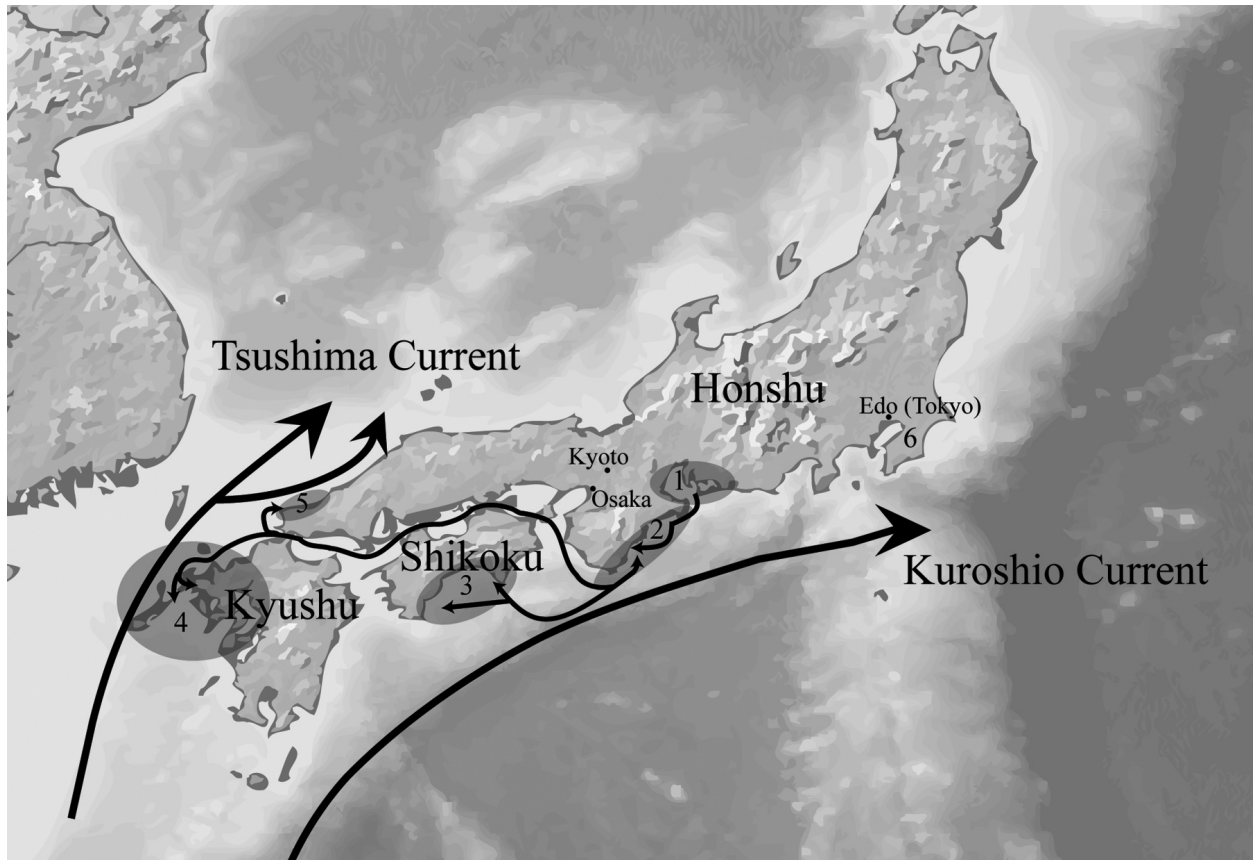


Figure 1.3: Whale migration routes (along the Kuroshio and Tsushima Currents, indicated by thick arrows) and movement patterns of whalers (along the thinner arrows) between areas with organized whaling groups. Whaling areas are shaded and indicated by numbers on the map. 1: Ise and Mikawa Bays, 2: Kumano coast area, 3: Tosa Bay, 4: Saikai area, 5: area around Kayoi, 6: Bōsō Peninsula (unshaded because a different form of whaling was practiced there, and they were not part of the organized whaling network).

these modern-day impressions of marginality should not color our ideas of these spaces too strongly. While road access to these places was not simple with Edo-period Japan's widely used system of roads, coastal waters formed another type of road whose utility is often overlooked. By refocusing our view of the space of coastal Japan to include sea access, whaling villages and other fishing villages become more thoroughly a part of the lively coastal transport and trade between the cities of Osaka and Edo and these supposed hinterlands.

The Kumano coast is a prime example of how thoroughly whaling villages could be connected to the centers of population and culture of the period, and also of how residents there



Figure 1.4: Six-panel painted screen *Kishū Kumanoura hogeizu byōbu*, Wakayama Prefectural Museum catalog #122 (unknown author and date). This screen shows whaling groups from the villages of Miwasaki (upper left), Taiji (bottom of leftmost panel), and Koza (far right) hunting along the Kumano coastline. The groups are all labelled indicating which village they belong to, and the lookout posts on shore also have labels.

included coastal waters as part of their space. A map painted between about 1700 and 1868 on a folding screen shows the whaling activities in this area. It brilliantly illustrates the fact that inhabitants of these villages looked to the sea to connect them rather than to roads through the steep mountains that rose rapidly from their shores (Figure 1.4).² This image shows the many boats of the Koza, Taiji, and Miwasaki whaling groups all out on the water at the same time, hunting different whales. The sections of land focus on the hills seen from the sea and on the couple of places where whales were brought ashore, fading quickly to hints of mountains and mostly blank space in contrast to the lively activity on the water, which occupies nearly 5/6 of the screen panels. The groups are not working entirely independently of each other, either. One of the sets is labelled as a joint Taiji/Miwasaki operation, although other groups are labelled individually as belonging to the village of Taiji or to Miwasaki.³ Despite being located on the far

2 Local resident of the town of Shingu and descendant of the Taiji whaling family Taiji Akira notes that people tended to travel between villages by boat far more frequently than over land along the Kumano coast even into the twentieth century (pers comm).

3 This set of six panels in two screens, *Kumanoura hogeizu byōbu*, is held in the Wakayama Prefectural Museum (catalog #122, anonymous with no date), with a reproduction of the image in Kushimoto chōshi hen-san iinkai,

side of Kishū domain from the administrative center in Wakayama castle, the people of Koza, Taiji and Miwasaki were not completely isolated from more central areas, either. Kishū was a large domain of 555,000 koku, and belonged to the branch of the Tokugawa clan which produced later shogun Tokugawa Yoshimune (徳川吉宗), making the domain as a whole quite influential. Whale products such as meat, oil, and ground-bone fertilizer did not remain within the area of the whaling villages alone, but had to travel to merchants in more populated areas, including as far as Osaka and Edo, and this coastline was along the route between these major cities. The area also received visitors on their way to major temples and shrines such as Kumano Nachi shrine (那智大社) and Ise Grand Shrine (伊勢神宮).

In fact, the four major whaling areas of early modern Japan were all closely connected along common shipping routes, no matter how disconnected and marginal they may seem today. Even after the Tokugawa shogunate made efforts to restrict foreign trade to specific ports under their control, such as Nagasaki and Hirado, coastal shipping was an important avenue for getting rice tribute and other goods to Osaka and Edo. Much of this shipping passed through the Seto Inland Sea from Kyushu, Shikoku and the far western parts of Chōshū. In his analysis of coastal trade statistics from the Tokugawa and Meiji periods, Louis Cullen argues that the "fleet which carried the coastal trade of Japan was probably almost as large as the entire fleet engaged in both the coastal and foreign trade of England and Wales," which is a not insignificant amount of shipping.⁴ Furthermore, people as well as goods moved along the coast in some of these boats. Despite government policies trying to keep people (especially rural villagers) in one place, one does find migrant fishermen during the early modern period.⁵ Robert and Yoshiko Flershem's

Kozachō shiryō - Hoge hen kaiga shiryō, 2-5 and also Fukuoka-shi hakubutsukan, "Fukuoka-shi hakubutsukan tokubetsu kikakuten: Nihon to kujira," ed. Fukuoka-shi hakubutsukan (Fukuoka: Shunhōsha Shashin Insatsu KK, 2011), 67.

4 Cullen, "Statistics of Tokugawa Coastal Trade and Bakumatsu and Early Meiji Foreign Trade," 185.

5 Robert G. Flershem and Yoshiko N. Flershem, "Migratory Fishermen on the Japan Sea Coast in the Tokugawa Period," *Japan Forum* 3, no. 1 (1991).

article describing these migrants focuses on Kyushu fishermen who, making use of their strong background in maritime trade from before the Tokugawa period, tended to migrate northeast along the Japan Sea Coast. As I will show, migrant whalers from the Kumano area also went to both Tosa and to the Saikai area of Kyushu, making use of their expertise to either found new groups, or to work for a few years in distant waters before returning home. In other words, whalers did not work in isolation within marginal villages. The same trade routes that shipped goods between northern Kyushu and Osaka, as well as the relatively direct sea-route between the southern Kumano coast and Tosa, proved equally useful for whalers moving between successful whaling areas in the early modern period.

There are gaps in our knowledge about migratory patterns of whales in the past, and even today the ranges and migration routes of most Pacific whale populations are not fully known. Historically, the most information we have about whale locations comes from whaling records, so there certainly could have been whales found in places that they were not hunted and thus never were recorded. However, examining the history of whaling does provide at least a starting point for determining where whales interacted with people. It is important to remember that, even if whales were recorded because of their usefulness as a resource, they were important actors along Japanese coasts apart from this role. Whales brought people together in whaling villages, along the coasts where they migrated, and also between villages as far apart as Taiji, Arikawa, and Kayoi. This chapter will look at whaling history as a larger process, including the preferred environment of whales and the choices they made about where to go. As whalers spent time in that environment interacting with different whale species, they brought these large members of the marine world into the human history of early modern Japan in significant ways.

Organized Whaling and the Environment

Organized whaling in early modern Japan was practiced in different locations, but with some interaction between most if not all of these locations. Here, I will neither consider the changes in whaling practices focused on one particular location, nor assume that the trade of tools and expertise between whaling locations means that any given location can stand in for the history of whaling in Japan as a whole. Instead, I wish to consider how the different environments of each whaling area influenced both local practices and the way in which those practices could be transmitted to other areas. Communication between whaling groups was relatively frequent, for example through experts from one place moving elsewhere to teach or to start up a new group. But even when different locations shared the same knowledge of techniques or even the same personnel, not all whaling areas had the same environmental characteristics in which those techniques were used. There were some major changes in Japanese whaling practice over the course of the early modern period. But these changes often did not remain solely in the location where they first developed, so a complete picture of the history of whaling during this time requires an understanding of both overall changes in techniques and of the specifics of practicing these techniques, which may have differed in the varied locations where they were used.

For the purposes of this argument, what is organized whaling? Scholars of whaling recognize two main types: active and passive. Passive whaling refers to taking advantage of cetaceans (whales or dolphins) that have beached themselves or washed up on shore, and thus has probably occurred at some point in time anywhere that cetaceans come close to shore near human habitation. Passive whaling is not, however, what most people think of when they hear the word "whaling" today, and is not generally my concern here. In contrast, active whaling

refers to planned and active hunting for cetaceans. There are many ways to do this, from relatively simple aboriginal whaling practices to modern harpoon-gun-mounted catcher boats and factory ships. It should be noted in discussing the development of different whaling techniques that passive and active whaling are not mutually exclusive, nor are older active whaling techniques necessarily discarded when new ones are invented. By organized whaling, I refer to a form of active whaling for which we first have records near the end of the sixteenth century in Japan. This involves not just an opportunistic rush to take advantage of the rare appearance of a whale, but rather a concerted effort to bring together a group of people and specialized equipment ready to hunt and bring in a whale when one appears close enough to shore. The specifics of how these groups were organized, the way in which they managed to catch the whale, and even what kind of whale they were hunting varied throughout the period. The common thread for organized whaling is the presence of a group of whalers using specialized equipment such as harpoons, rather than a gathering of fishermen who happened to try to bring in a sick, lost, or dying whale with tools and expertise usually applied to other forms of fishing.

The reason I am focusing on organized whaling, and not simply referring to the start of active whaling in Japan, is because accounts of Japanese whaling history differ on starting era. The discrepancy exists in part because of problems in determining how active early whaling practices were. There is archaeological evidence for some kind of cetacean hunting, mostly involving dolphins, from approximately 5,000 years ago in the Jōmon period. Unfortunately, there is little evidence for what prehistoric behavior matched the artifacts and bones found, so it is difficult to tell how active these hunting practices were. Based on stone weapon points and possible net weights, Jōmon fishermen may have used nets to drive dolphins into enclosed bays

where they could spear or shoot them with arrows.⁶ However, some scholars assume that active whaling would not have been possible with the level of boat technology available to Jōmon people, and thus see their practices limited to opportunistic capture of wounded or dying animals or beached ones.⁷ Even though we have the remains of arrows and spears to indicate what kinds of weapons might have been used to hunt dolphins and possibly whales, these remains do not necessarily indicate a coordinated hunting pattern. The interpretation of archaeological evidence sometimes rests on the extent of an author's desire to see a long tradition of active whaling in Japan. Proponents of modern whaling such as Komatsu Masayuki see the numbers of dolphin and whale bones found from the Jōmon period as an indication of active whaling, which then supposedly continues more or less directly into contemporary practices.⁸ As a more objective scholar of whaling history, Morita Katsuaki (森田勝昭) acknowledges that there does appear to be evidence of active dolphin hunting, but the meaning of the evidence in the case of mid-size and larger cetaceans is unclear and still under debate.⁹ However, not all supporters of Japanese whaling bother to acknowledge Jōmon practices as relevant to whaling history. For example, Arne Kalland and Brian Moeran do not note practices further back than the seventeenth century in their book, which definitely was written in support of modern whaling.¹⁰

In any case, while there are textual references to whaling practices, or at least whaling products such as meat, scattered through early Japanese history, a clear and major change began

6 Tetsuo Hiraguchi, "Catching Dolphins at the Mawaki Site, Central Japan, and Its Contribution to Jomon Society," in *Pacific Northeast Asia in Prehistory: Hunter-Fisher-Gatherers, Farmers, and Sociopolitical Elites*, ed. C. Melvin Aikens and Song Nai Rhee (Pullman, Wash.: WSU Press, 1992).

7 For example, Torisu Kyōichi, *Saikai hōgei no shiteki kenkyū* (Fukuoka-shi: Kyūshū Daigaku Shuppankai, 1999), page 67.

8 Komatsu Masayuki, *Kujira sono rekishi to bunka* (Tokyo: Goma Shobō, 2005), p 126-134. Komatsu is a former whaling commissioner for Japan and invokes Jōmon whaling as the start of Japanese whaling traditions frequently in his books, which are directed at a general audience. Ōsumi Seiji, *Kujira to Nihonjin*, vol. 835, Iwanami Shinsho (Tokyo: Iwanami Shoten, 2003) also describes whaling in this manner, showing as long a history of it as possible.

9 Morita Katsuaki, *Kujira to hōgei no bunkashi*, (Nagoya-shi: Nagoya Daigaku Shuppankai, 1994), p 128-130.

10 Arne Kalland and Brian Moeran, *Japanese Whaling: End of an Era?*, Nordic Institute of Asian Studies Monograph Series ; No. 61 (London: Curzon Press, 1992).

around the late sixteenth and early seventeenth centuries, which marked the rise of an active whaling enterprise on a much larger scale than previously seen. This is where accounts of traditional Japanese whaling generally focus. Here, too, the characterization of whaling and choice of landmark events can be colored by the politics of the author, but unlike for the Jōmon period, there is agreement that at some point near the start of the Tokugawa period a new form of active and organized whaling arose. While Morikawa argues strongly against the importance of whaling in both historical and contemporary Japan, emphasizing that "commercial whaling in Japan in the Edo period was small in terms of scale and localities," most authors agree that this period was when the whaling industry as a large-scale endeavor appeared.¹¹ Because the term used in Japanese whaling histories for Edo-period practices (old-style or traditional whaling, *koshiki hokeigyō* 古式捕鯨業) can lead to confusion about which tradition and how far back from modern the time period is supposed to include, and because "active whaling" may or may not include practices before the rise of large organized whaling groups, I have chosen to refer to the early modern whaling practices here as organized whaling.

The Rise and Migration of Harpoon Whaling Groups

One way to define the arrival of organized whaling is the presence of specialized harpoons rather than the spears or arrows used in earlier whaling practices. The use of harpoons required coordinated hunting from more than one whaleboat chasing after the target whale, and thus led to organized groups. The first known instance of harpoon whaling was in the 1570s, in the interconnected Ise and Mikawa Bays, by fishermen from the village of Morozaki on the tip of

¹¹ Jun Morikawa, *Whaling in Japan : Power, Politics and Diplomacy* (New York: Columbia University Press, 2009), p 28. The objection he makes is not to the existence of whaling, but to what he feels is an exaggeration of its scale and importance during this period. I hope in this dissertation to provide a closer look at this problem of influence and scale. Unfortunately, in countering the claims made by whaling supporters of the importance of whaling, he goes too far in the other direction and assumes that whaling in the Tokugawa period was sustainable, which it was not in all areas: see the section later in this chapter talking about Ise and Mikawa Bay whaling.

the Chita peninsula between the two bays. There does not appear to be any source material remaining from this practice directly, but there are sources from later in the Edo period referencing the practices in Ise Bay. *Geiki* (鯨記), an early whaling history whose contents are only known now from references in later works, such as the encyclopedic work on whales and whaling *Geishikō* (鯨史稿), apparently described 7 or 8 boats using a spear or lance (*hoko* 鉾) for whaling in Mikawa Bay beginning sometime in the Genki era (1570-1573). *Saikai geigeiki* (西海鯨鯢記), a record of Kyushu whaling written in 1720, also describes the start of organized whaling in Mikawa Bay using similar phrasing.¹² But by the time *Geishikō* was written in the early nineteenth century, the author noted that one no longer heard of professional whalers in that area.¹³ Furthermore, from *Saikai geigeiki*'s references, whaling began not just with the one group in Mikawa Bay, but also with people in Noma, and spread to groups in Ōsatsu by 1592 and the down the coast to Kumano area of Kii by 1596¹⁴ (see Figure 1.1). While there is not much more detail available about what these groups were doing, some information can be interpolated from records of gifts of whale to the Imperial court. For many years between 1582 and 1625, the people of Ishindenkō sent whale gifts to the court, so someone was fairly consistently acquiring whales in the Ise area up through the early part of the Edo period.¹⁵ The lack of records leaves the main purpose for the early Ise Bay whaling groups' purpose in pursuing whales, but the records of gifts of whale meat indicate that at least some of the whale was intended for consumption by people of high rank. Thus, one of the goals of whaling was to produce delicacies for tribute.

12 Reprinted in quotation by Wada Tsutomu, "Kinsei hogeigyo no keiei ni tsuite: Ise-wan • Kumano-nada engan wo chūshin ni," *Fubito* 57, no. 1 (2005), p 34.

13 As copies of *Geishikō* do not always have page numbers, this refers to a section of the text quoted by Wada with no original page reference in "Kinsei hogeigyo no keiei ni tsuite," p 33.

14 Reprinted in quotation by Wada, "Kinsei hogeigyo no keiei ni tsuite," p 34.

15 *Ibid.*, p 33 cites these instances from the *Harutoyoki* without further reference to specifics of this source.

What happened to whaling in this area that led to it dying out sometime before 1800, when other areas such as the Kumano coast and northern Kyushu prospered for much longer? Wada Tsutomu (和田勉) describes the history of whaling in Ise and Kumano as having a travelling center, where the practice began in villages along the Ise coastline, but migrated gradually south to be centered along the Pacific-facing Kumano coast by the 1630s. By this time, instead of (or in addition to) sending whales to the Imperial court in Kyoto, whalers in Owase (south of the bay on the Pacific coast of Mie Prefecture) were sending whale to the shogunal capital of Edo.¹⁶ Unlike most other, later whaling groups, Ise whalers may not have depended as heavily on the migration of cetaceans, but rather on a population which sheltered in the bay for a time during coastal migration, or even stayed there year-round.¹⁷ The shifting location of whaling villages does seem to support the idea of people who had honed their skills hunting whales moving to find new places where whales were abundant enough to be worth trying for. If whalers began by focusing on a population consistently localized in the bay, and the numbers of whales began to decline, either through overfishing of a relatively static population, or through whales beginning to avoid the area where they were in danger, expert whalers would either have to give up their practice, or try their hand somewhere with an untouched target population. This decline in available whales may not have been limited to just the area inside the bays. For example, there is some indication that Kii's domain-managed whaling in the Owase area, which had begun in 1754, was shut down in 1770 due to lack of whales.¹⁸ Whaling historian Kondō Isao

16 Wada, "Kinsei hogeigyo no keiei ni tsuite," p 34, from information in the *Kenbun ketsugishū*.

17 Although most baleen whales are migratory, there have been populations or subgroups of whale species which do not migrate, such as the humpback whale population in the northern Indian Ocean near the Arabian Peninsula Howard C Rosenbaum et al., "Population Structure of Humpback Whales from Their Breeding Grounds in the South Atlantic and Indian Oceans," *PLoS ONE* 4, no. 10 (2009). Thus, a non-migratory population in these bays is a possibility, although the probability of it happening is unknown.

18 Mie-ken Owase shiyakusho, *Owase-shi shi* (Tsu-shi: Tōa Insatsu Ltd., 1969), p 627-628. Unfortunately this city history does not provide a reference to the source of this information, which was likely found in local records belonging to the city.

characterizes the dynamics of the early stages of organized whaling by explaining that "it seems the whale [stocks] were gradually becoming exhausted" in the Ise area, and thus these harpoon whalers, "consequent to the decline in whale resources, groped for new fishing sites."¹⁹ Possibly some of the movement down the Kumano coast to the more southern section was also driven by declining whale populations, or at least populations which under whaling pressure changed their migration patterns to not hug the shoreline as closely as they used to.

Even scholars such as Jun Morikawa who otherwise deplore Japanese whaling practices today will often make the assumption that Tokugawa-era practices were so small-scale (in comparison to modern practices) that "the whaling of that time had little impact on the marine ecosystem. In fact, it was what might be called sustainable whaling."²⁰ If these practices had truly been sustainable, the Ise Bay whaling enterprise could have continued indefinitely. At the very least, sustainable whaling should have continued through the end of the Edo period, as it did in other major whaling areas. Instead, the small, enclosed population that they depended on could not support the practice that developed there, and the men who had become experts in whaling had to move out of the bay and down the coast. While there are no records of the specific numbers of whales caught in Ise and Mikawa Bays, there were 192 total whalers from four different groups going out onto the water in 1758 from the Kuki peninsula in the Owase area, about 60 miles to the southwest of the bays, which does not indicate a particularly small-scale effort of hunting whales in one area.²¹ Whatever basis for comparison is used to determine whether the scale of this effort was small or large, the historians of Owase city note that whaling in this area had vanished by the mid-Edo period (likely before 1800) due to a lack of whales, so

19 Kondō Isao, *Nihon engan hōgei no kōbō* (Kokubunji-shi: San'yōsha, 2001), p 29.

20 Morikawa, *Whaling in Japan*, p 20.

21 These figures are from Mie-ken Owase shiyakusho, *Owase-shi shi*, p 628, with an unknown original source.

it was clearly too large-scale an effort to be sustainable, even in a more open area which did not have a resident whale population.²²

It is clear that the start of organized whaling in villages along the Kumano coast was not an independent development from the Ise bay whalers; at least some of the whalers did literally move down the coast to begin new groups there. In Taiji, the first organized whaling group was founded in 1606 by Wada Chūbei Yorimoto (和田忠兵衛頼元), with the assistance of a harpooner from Morozaki named Denji (伝次). His other founding partner was a man from Sakai, Iemon (伊右衛門), who was a rōnin with experience supervising fleets. This is considered a major landmark in the development of the early modern whaling enterprise, although many histories of whaling provide only the names of Yorimoto's assistants (leaders of whaling groups) in creating the enterprise. This lack of detail might imply that Denji moved directly from Morozaki whaling to be employed in Taiji whaling.²³ However, the account provided by Takigawa Teizō (滝川貞蔵) in his descriptions of the legends of Taiji offers a different image of the Ise Bay whaling situation, one which fits with the idea that there was a problem with or decline in whales there. He says that both Iemon and Denji were part of a group ferrying lumber for Toyotomi Hideyoshi's (豊臣秀吉) castle in Osaka when they were wrecked and washed ashore with three other men on the Taiji peninsula.²⁴ The fact that Denji had moved on from whaling to working in marine transport would seem to indicate that he was not specifically

22 Ibid., 629.

23 Yamashita Shōto, *Hogei I, Mono to ningen no bunkashi* 120 (Tokyo: Hōsei Daigaku Shuppankyoku, 2004) provides the most information about these men's background apart from Takigawa Teizō, *Kumano Taiji no denshō: Takigawa Teizō ikō* (Tokyo: Kōsakusha, 1982). Sources which mention little more than their names include Komatsu Masayuki, *Yoku wakarū kujira ronsō: Hogei no mirai wo hiraku*, vol. 22, Berusō Bukkusū (Tokyo: Seizandō Shoten, 2005); Wakayama kenshi hensan iinkai, *Wakayama kenshi. Jinbutsu* (Wakayama-shi: Wakayama-ken, 1989); Wakayama kenshi hensan iinkai, *Wakayama kenshi. Kinsei*, vol. 4 (Wakayama-shi: Wakayama-ken, 1990); and Taiji Gorōsaku, "Kumano Taijiura hogei no hanashi," in *Kujira, iruka no minzoku*, ed. Tanigawa Ken'ichi (Tokyo: San'ichi Shobō, 1997). English-language sources tend to provide mistaken versions of the founding story, including Kalland and Moeran, *Japanese Whaling's* confusion of Yorimoto for a later descendant Kakuemon rather than his alternate name Kinemon, and the more egregious mistake of Richard Ellis, *Men and Whales* (New York: Knopf, 1991) placing Taiji on the Bōsō peninsula.

24 Takigawa, *Kumano Taiji no denshō*.

searching for new whaling opportunities, but rather had been forced to give up on his earlier whaling practice for some reason. Since he turned his hand to whaling again in Taiji after being wrecked there, it seems that it was not his motivation for whaling that was lacking. So it should be noted that when I characterize whaling practices as moving gradually down the coast to the Kumano area from Ise and Mikawa Bays, this was not necessarily a conscious or organized shift. Rather, chance meetings and connections seem to have been an important influence in where and when different whaling groups would appear.

This is not to say that networking of whalers was unimportant. The paucity of sources about Ise whaling makes it difficult to determine how much the expertise of whalers there travelled to other places in the accidental manner of Denji's shipwreck instead of more conscious attempts to move whaling grounds. But along the Kumano coast, after Yorimoto began harpoon whaling in 1606, a strongly linked set of groups arose, based out of Miwasaki, Taiji, and Koza villages (Figure 1.1). The success of these villages inspired others to pick up the technique and found groups in Shikoku and northern Kyushu. An important aspect of the networking that drove organized whaling in so many different areas is the rank of the managers of the groups. Whaling in the early Tokugawa period was in many ways a holdover from the naval forces of the earlier Warring States period. Wada Yorimoto was from a warrior lineage (possibly with some connection to piracy). His father had been killed in Korea while commanding a group of 10 retainers, and Yorimoto himself began in the service of a samurai named Asano Yoshinaga (浅野幸長), who had been awarded a fief in Kii for services rendered to Tokugawa Ieyasu (徳川家康) at the battle of Sekigahara. By the time Yorimoto organized the first professional whaling groups, he was lord of a manor, in charge of collecting taxes and coordinating corvée labor for 20

villages.²⁵ His family remained high-ranking village elites even after he settled down to a more peaceful lifestyle in the country.²⁶

In a similar fashion, the founder of the first whaling group in the southern domain of Tosa on Shikoku in 1624 was a local samurai with naval experience during the Warring States period. There was some opportunistic whaling in Tosa Bay earlier than this date, as there is a record that Hideyoshi was presented with a whale by Warring States daimyo Chōsokabe Motochika (宗我部元親) at the end of the sixteenth century. However, it is unclear whether that gift came from a whale specifically hunted by an organized group or just one that washed ashore.²⁷ There is a brief mention of whalers hunting in Shikoku in 1617 in *Geishikō*, although nothing about what kind of group organization this might have involved.²⁸ It is not until Tada Gorōemon (多田五郎右衛門) founded his whaling group in Tosa, 18 years after Yorimoto began his whaling groups in Taiji, that there is clear evidence of organized whaling in Shikoku. He, like Yorimoto, was a warrior, who settled down to be village headman of Tsurō once the Tokugawa peace began. He was given the position by the younger brother of the daimyo of Tosa, in part because his prior experience as a vassal in crewing boats during the Warring States period made him a good protector of the Tosa coastline. It is possible that he developed his whaling independently from earlier groups, although it is also possible that he made use of some expertise from the Ise or Kumano areas. Still, on the basis of similar military experiences alone, it would be difficult to claim a totally independent origin for his whaling techniques, since both founders were likely adapting their prior military training to harpoon techniques and strategies.

25 Ibid., 107.

26 For a detailed family history, see Taiji Akira, *Taiji Kakuemon to kujirakata* (Wakayama: Nishioka Sōgō Insatsu, 2001).

27 Muroto-shi shi henshu iinkai, *Muroto-shi shi* (Muroto: Muroto-shi, 1989), p 86.

28 From a section of *Geishikō* cited in Muroto-shi shi henshu iinkai, *Muroto-shi shi*, p 87.

Whatever the original impetus for their whaling group, there was a much stronger interconnection between Tosa and other whalers later in the century. Gorōemon's group ceased operations in 1641, after the numbers of passing whales had diminished too much to support the enterprise of over 200 fishermen.²⁹ Ten years later, a samurai from Owari was installed as governor (*daikan* 代官) of the district of Akigun, and seeing a number of whales swimming off the coast he contacted his relative Oike Shirōemon (尾池四郎右衛門), who quickly came to Tosa with 6 whaleboats and began operations there. His group may have been based out of the village of Ukitsu on the eastern shore of Tosa Bay, or Saga on the western shore, since both were whaling sites in winter and spring during that period. They only stayed for six years before returning to their own domain, but this example does show how, in some cases, entire groups from the Ise Bay area and northern Kumano coast moved elsewhere when they heard of better possibilities.³⁰

There were also whalers operating in the islands on the northern edge of Kyushu before the Tokugawa period, for example the group in Arikawa on the Gotō islands starting in 1598, which had expanded to ten groups by 1605.³¹ However, while some of these whaling efforts may well have been independent of whalers in other areas of Japan, there were definite ties between Kyushu whaling and the Kumano coastal whalers, most of whom lived in Kishū. Sometime in the Kan'ei era (1624-1644), Fujimatsu Han'emon (藤松半右衛門) from Kishū brought 13 whaleboats to Hirado, and in 1625 another Kishū whaler, Yoshibei (與四兵衛), brought 20 boats to Yamadaijima to found a whaling group there.³² A whaler from Yuasa in Kishū came to become head of the whaling group in Arikawa in 1626, and another from Koza partnered with the head of

29 Ibid., 89.

30 Ibid., 89-91.

31 Dohi Kazuo, "Saikai oyobi Ikishima ni okeru kujiragumi to Dohi kujiragumi ni kankei suru nendaibetsu no nagare," *Sora-ou 300nen kinenki web-han* (2010), <http://mtv17.ninpou.jp/iki2/sora/dohi.htm>.

32 Hirado-shi kyōiku iinkai, *Saikai geigeiki*, Hirado-shi no bunkazai (Hirado: Hirado-shi kyōiku iinkai, 1980); Dohi, "Saikai oyobi Ikishima ni okeru kujiragumi."

Arikawa village to begin a harpooning group in the same year.³³ So, as harpoon groups were developing in Ise and Miwasaki Bays, as well as in villages along the Kumano coast, some whalers took their chances in the rather more distant Saikai area of Kyushu rather than competing within their home region. This is likely a sign of not just the intensity of competition in Kumano, but also of the close relationship between that region and the islands north of Kyushu to which it was connected by coastal trade. Whalers in Kishū knew that whales were abundant in the Saikai area, and managed enough cooperation with local officials at varying levels of government to relocate there. By 1650, there were whaling groups operating in 73 different locations in northern Kyushu, at least some of whom had direct ties to whalers in the Kumano area.³⁴ For example, during the period from 1636 to 1661, a total of 25 harpooners and 2 crew members from the whaling village of Miwasaki, in Kii, worked for different whaling groups in the waters around the Gotō islands in Kyushu, although individuals tended to work for only a few years each.³⁵

The question of where whaling groups operated is not simply a case of determining areas of the ocean to which whalers had access. Whaling groups required more than just an ability to row offshore to catch whales. They also needed a space on the coast where they could bring those whales back to the beach and haul them ashore for processing. This meant a space to build processing sheds, as well as sheds where the whaling equipment could be repaired between seasons. Sometimes these buildings were dismantled and rebuilt in other sites, and they were not always specifically used solely for processing whales. For example, in the records of the Koyama clan in Kishū, there is a note from the Kozaura village leaders requesting they be lent a

33 Dohi, "Saikai oyobi Ikishima ni okeru kujiragumi."

34 As indicated by the description in Hirado-shi kyōiku iinkai, *Saikai geigeiki*, also in Morita, *Kujira to hōgei no bunkashi*, p 144-145.

35 Wakayama kenshi hensan iinkai, *Wakayama Kenshi. Kinsei Shiryō* (Wakayama-shi: Wakayama-ken, 1976), vol 5 source 4.1.

boathouse for their fifteen whaling boats during the upcoming season in 1677. The village leaders make a point of saying that they will of course return the building to the lord's use whenever he wants it, so at least nominally the whaling group's property was owned by the higher-ranked Lord Koyama Yajūrō (小山弥十郎) rather than by the group or villagers themselves.³⁶ With the success of whaling in Taiji, many other villages became interested in beginning whaling operations. By 1675, because of the number of people wanting to be involved in whaling enterprises, Wada Yoriharu (和田頼治) gathered together village administrators from seven of the villages in the Kumano region and made an agreement with them to reduce confrontations over whaling sites.³⁷ This was also the time and place when the next major development in whaling practices appeared.

Whale Species and Changes in Whaling Techniques: Net Whaling

As can be seen both from the cycles of boom and bust in particular whaling groups like Tada Gorōemon's and from the conflict that arose over whaling sites in Kumano and elsewhere, there was intense pressure on the migratory whale populations passing by the Japanese coast in the early seventeenth century. While the next major change in traditional whaling is often seen simply as a technical improvement - the invention of a method which used nets as well as harpoons - this technique was strongly connected to the need to expand target species of whales. For the most part, whaling communities throughout Japan tended to focus on similar species. During the early stage of organized whaling, as with other whaling communities in Europe and America, the preferred target was the right whale (*Eubalaena* species: in Japan, *Eubalaena japonica*). Other whales of similar size, the gray whale and the humpback whale, swim slightly

³⁶ Source 3.1.1 in Kushimoto chōshi hen-san iinkai, *Kozachō shiryō*, p 499.

³⁷ Wakayama kenshi hensan iinkai, *Wakayama kenshi. Kin-gendai* (Wakayama-shi: Wakayama-ken, 1989).

faster and tend to sink when killed, and thus were more difficult targets. The new net whaling technique, whose development is usually credited to Wada Yoriharu of Taiji in 1675, involved driving passing whales into nets to entangle them and hold them for harpooners to more easily kill. This also kept gray and humpback whales from sinking after they died. While some species other than right whales had been taken by harpoon whaling groups before the invention of net whaling, this new procedure made it much easier to target the faster and less buoyant whales which had not previously been worth the effort of chasing when there were plenty of right whales available.

The technique of entangling whales in nets was not developed solely in Taiji: the earliest evidence for the use of nets is in the village of Kayoi (Yamaguchi prefecture) on the Japan Sea in 1672. However, in Kayoi they used a method which involved setting a large straw net, into which they chased the whales and then harpooned them.³⁸ The technique developed in Taiji used hemp, a much stronger if more expensive material that stood up better to the force of the whales. They also set the nets from dedicated net boats rather than a specific fixed location as was done in Kayoi's bay.³⁹ Kayoi's straw net whaling took advantage of the fact that their peninsula formed a bay where migrating whales would sometimes swim into or could be driven into instead of passing along the coast. Once a net was pulled up across the mouth of the bay, the whales were trapped and easier to capture, even when they were faster-swimming than right whales. A similar form of fixed-net whaling developed in Ineura in 1656, on the northern coast of modern Kyoto Prefecture. Three villages there would drive whales which had followed sardines into the bay away from its mouth, where they would then set nets to close off escape so they could chase and

38 Kondō, *Nihon engan hōgei no kōbō*, p 32.

39 It is possible that there was some work developing a net-entangling technique in Taiji before 1675. This is simply the first year that documented evidence of specialized net boats appear in the tax records for Taiji. Kondō, *Nihon engan hōgei no kōbō*, p 33.

capture the trapped whales more easily. Using this method, they were able to take not only humpback and right whales, but also the much faster fin whale. They caught an average of 2 whales a year, with a maximum of 11 in one year.⁴⁰ Because the method developed in Taiji was not dependent on the local landscape configuration, it was the one which spread to other whaling areas and became known as the source of the net whaling technique. Furthermore, straw nets were only strong enough to entrap right whales and gray whales, whereas hemp could withstand the force of humpback whales as well. This new technique thus opened up two new species as regular targets for whaling. By 1680, diminishing numbers of gray and right whales (the two slowest and easiest whale species to catch) forced the development of a new technique to shift targets to more difficult to catch and thus less-exploited species. The peak catch of 95 whales in one season for Taiji whalers occurred in 1681, after which numbers gradually fell.⁴¹

It is no coincidence that the net whaling technique spread outwards from Taiji with the skilled labor they sent to teach it after the peak year in 1681. Whalers in search of continued successful seasons spread the new technique within a decade from Taiji to Tosa (1683) in Shikoku and Hizen in Kyushu (1684), and from there on along the Japan Sea coast to Chōshū.⁴² They also sent the net whaling technique back up the Kumano coast to the region around Owase, which would have been simple enough to accomplish through direct experience, as villages within Kishū were possible sources of whaling labor for places like Taiji. For example, the people of the fishing village of Sugari repaid a debt to Taiji in 1751 and onwards by sending crew for whaling to Taiji, with as many as 19 men being sent to work by 1781.⁴³ The net whaling technique was more complex than simply surrounding a whale and throwing harpoons at it, and

40 Nakazono Shigeo and Yasunaga Hiroshi, *Kujiratori emonogatari* (Fukuoka-shi: Gen Shobō, 2009), p 34.

41 Kondō, *Nihon engan hoge no kōbō*, p 33.

42 Morita, *Kujira to hoge no bunkashi*, p 144-145.

43 Mie-ken Owase shiyakusho, *Owase-shi shi*, p 627.

this complexity may explain why the technique spread through expert teaching and management rather than just the word of mouth that may have inspired Tada Gorōemon's harpoon group. For example, in their 1683 revival after 20 years of being disbanded, whaling groups in Tosa had to bring in not only an expert harpooner from Kumano to lead each group, but also five expert crew apiece, possibly as boat captains.⁴⁴ One of the reasons they had to import help was that Taiji's whaling group manager Taiji Kakuemon (太地覚衛門) was unwilling to speak with Tada Yoshizaemon (多田吉左衛門) from Tosa, who had travelled to Taiji to try to learn the net whaling method. He had to live there for two years, working as a crewman on one of the whaling boats and doing his best to observe the overall organization of the practice, before he finally had a meeting with the manager and was able to bring the technique back to Tosa.⁴⁵

Given the numbers of whalers from various parts of the Kumano region who had gone to Kyushu for whaling since the 1620s, it is likely that the news of the new net whaling technique developed in Taiji arrived quickly in Kyushu. However, there is less direct evidence indicating how the new technique was either discovered or taught in this region. By 1680, net whaling was happening in Setoura, and one of the two major whaling managers in the Saikai area, Fukazawa Gidayū (深沢儀太夫), was operating net whaling groups in the Gotō islands by 1683, and expanding to Katsumoto on Iki island in the next year (see Fig 1.3).⁴⁶ While it is difficult to determine historical whale populations from anything other than catch data, there appears to have been a larger population of migrating whales passing by northern Kyushu than along the Kuroshio current (or at least a larger number of whales coming in close enough to shore in Kyushu to be targeted by coastal whalers). Catches did not show the same peak and decline as in Taiji after the introduction of net whaling. For example, the yearly catch for the Arikawa whaling

44 Muroto-shi shi henshu iinkai, *Muroto-shi shi*, p 91.

45 Ibid., 92-93.

46 Dohi, "Saikai oyobi Ikishima ni okeru kujiragumi."

group in the Gotō islands between 1691 and 1727 did not fall below 20 whales, and had totals between 60 and 80 whales in the 1690s and again in 1710 and 1725. Admittedly, the best years were in the 1690s, after which the peak catches were smaller and for fewer years at a time, so there was some change in either whale population size or their ability to evade capture, but this one group consistently managed at least 20 whales a year throughout this 35-year period, in an area where there was the highest concentration of whaling groups in Japan.⁴⁷

In considering the effects of net whaling, a technique which was central from 1675 through to the end of the period, it is important to note that the groups which employed it were often not very long-lived. As with harpoon groups, the practice of whaling was not carried on by an unbroken line of whalers, but rather a series of groups which lasted for a certain (usually rather short) period of time before going bankrupt and being revived by someone else. Much of this dynamic aspect of whaling was influenced by the ways that whales moved through a given area and by the changes in whale populations caused by whaling pressure. Even in areas where whaling was more or less a continuous practice, the fact that there often were many short-lived attempts at successful whaling groups over the course of that practice shows that the presence and availability of whales was not constant. This is not a problem confined to the longevity of net whaling groups; the first harpoon whaling group put together by Wada Yorimoto in Taiji in 1606 only continued until 1614. Then whaling was restarted in the next year by Iheimon, but only for two years before it too was suspended. Turnover was common in part because there were high startup costs to gathering the equipment and people necessary for whaling, and not enough whales could be caught every season to pay back these costs. People continued trying again mostly because when the whaling season was successful, it could be very profitable

⁴⁷ See graph 3 in Suetō Tomoki, "Kinsei Nihon ni okeru hogeigyo no chiikiteki shūchū no keisei katei: Saikai hogeigyō chiiki no tokushusei no bunseki," *Okayama daigaku keizai gakkai zasshi* 40, no. 4 (2009), p. 439.

indeed, and most of the whaling areas did not have many other or better options for making a living.

Groups did not rise and fall independently from other whalers, either. Kukiura, on the Kumano coast, had village-managed whaling in 1683, during the early stages of net whaling. They came under Kishū domain management at a point when they were prospering, in 1754, as part of the institution of a domainal whaling office, and so became more closely tied to other whaling groups in Kishū at this point. After having some years where they were able to catch as many as two or three whales in one day, they started to not catch any in the 1760s. The domain's whaling office (and Kukiura whaling with it, apparently) was closed by 1770.⁴⁸ This closure provided Koza whalers with a source of equipment that they recorded as having "borrowed" from Kukiura in 1770, including nets, rope, knives and at least one boat, which of course was unlikely to have involved returning such equipment after the whaling group was no longer operating.⁴⁹ But the record of the equipment transfer, sent first from the headman (*shōya* 庄屋) of Kukiura to regional headman (*ōshōya* 大庄屋) Tamaki Motoemon (玉置元右衛門), and then from him to high-ranking officials of Kii domain, shows that the domain had a hand in regulating whaling not just through taxes or tribute payments but also in providing access to whaling gear. The use of the honorific in referring to the equipment may indicate that it was thought to belong to the domain rather than to the villagers.⁵⁰ This passing-down of equipment to Koza was also

48 Kukiura whaling is described in two places in Tameichirō Kuramoto, *Kumanonada (Owase chihō) gyoson shiryō shū* (Tsu, Mie-ken: Kyōdo Shiryō Kankōkai, 1968); the description on page 28 mistakenly notes the end of the whaling effort begun in 1754 as Meiji 6 (1873) despite also noting it lasted only sixteen years. Because the later reference on page 142 correctly notes this as Meiwa 6 (1769), the first instance is clearly a typographical error.

49 Source 3.3.2, Kushimoto chōshi hen-san iinkai, *Kozachō shiryō*, p 503-4. The other village referenced in this source is Kukiura.

50 Source 3.3.2, Kushimoto chōshi hen-san iinkai, *Kozachō shiryō*, p 503: the equipment is referred to as *odōgu* 御道具, not just *dōgu*.

part of the gradual shift of whaling's focal point southwards along the Kumano coast, facilitated in this case by the fact that both villages were within Kii's extensive territory.

Contact between groups was not limited to those within a single domain: groups also shifted across territories. This movement could promote the rise of new groups in the area left open by a departing group. After the Oike group (尾池組) moved from where they had begun whaling operations in Tosa back to Owari, the local people who had participated in the enterprise as crew and as processing help lost a major source of livelihood. Within a few years they became so destitute that there was talk of moving elsewhere, perhaps to Kyushu. Even though two previous whaling enterprises had already folded between 1625 and 1657, the situation for residents of the whaling villages after the cessation of whaling was so dire that the village headman of Ukitsu and the local elites, including the Tada clan who had moved away from whaling to become headman of the region (*ōshōya*), petitioned the domain to be allowed to revive whaling. Furthermore, with the arrival of net whaling in 1683, the particular locations of the whaling group bases shifted, operating out of sites in Shiina and Kubotsu in the winter but recombining to become one large group in the spring whaling season.⁵¹ Although the whale migration route along both sides of Cape Muroto allowed for villages on both sides (Shiina on the east and Kubotsu on the west) to be situated reasonably for whaling, this does not mean that there was ever an opportunity to trap whales within Tosa Bay, as had been done in Kayoi, or to have a semi-local population as may have occurred in Ise and Mikawa Bays. The mobile setting of nets developed in Taiji and used along the relatively unsheltered Kumano coast could be easily transplanted and just as helpful along the equally (if not more) unsheltered southern Shikoku coastline: Tosa Bay is more of an open half-circle than an enclosed bay, and its shores are generally smooth rather than indented with helpful islands and harbors. The original net whaling

⁵¹ Muroto-shi shi henshu iinkai, *Muroto-shi shi*, p 90-91.

group did not last much longer than the harpoon groups had, and a history of Tosa whaling written in the late nineteenth century blames its suspension on the fact that whales became rare.⁵²

Although two groups situated near each other in Tosa managed to coordinate during spring whaling, the competition between neighboring groups could also be quite fierce, with legal disputes over the definition of territory and who could, for example, claim a whale that had been injured by a whaling group offshore but escaped only to die and wash up on someone else's beach. When the net whaling method was invented in Taiji, the other groups in the area which still practiced harpoon whaling petitioned Kishū domain to force the net whaling to stop. But they lost their petition, and net whaling became the dominant method, requiring either retraining and new equipment for old groups, or simply the dissolution of those old groups and the construction of new ones by other backers.⁵³ To show just how complex these disputes between groups could become, it is necessary to turn now to the whaling practices in the Saikai area.

The Peak of Whaling Activity: Saikai Whaling Groups

Although the focus of my narrative thus far has centered on the Kumano region, it should be noted that nearly 80% of all the whaling groups in the early part of the Edo period were in the Saikai area of northwestern Kyushu. In this area, the Gotō islands, Ikitsukishima, Tsushima, and Iki island were all well-positioned along whale migration routes, and there were numerous beaches onto which whales could be hauled for processing.⁵⁴ This region is on the periphery of

52 Anonymous, "Tosa No Kuni Hogeisetsu," in *Tosa no kuni gunsho ruijū*, ed. Yoshimura Harumine (Held in the National Archives of Japan, 1836-1881), section 1: *Hoge raiyu no koto*. There are no page numbers given in the text, but the reference is on the third page of this section.

53 This petition was noted in a timeline of Taiji whaling events published in the research report Anon., "Wakayama-ken Higashimuro-gun Taiji-chō chōsa hōkoku (2004/10/23 - 25)," *Rikkyō Daigaku Nihongaku kenkyūjo nenpō* 5(2006), p 99-100. There appears to have been a similar fight which brought in bakufu oversight during the Genroku period in the Goto islands, according to Sueta, "Kinsei Nihon ni okeru hōgei gyojō."

54 Sueta, "Kinsei Nihon ni okeru hōgei gyojō," calculated from data in *Geishikō*: nineteen for all areas outside Kyushu, seventy-one inside Kyushu.

modern Japan. However, it was historically at the center of a far-flung and lively trading network, which may explain how it was possible to maintain such a prosperous whaling group as the Masutomi group (益富組) in this area. When the Tokugawa shogunate instituted tighter controls on shipping, whaling offered seasoned boat-handlers another option for making a living.⁵⁵ Unlike whaling in Kumano (almost entirely under the control of Kii domain), Shikoku (under the purview of Tosa domain), or the Japan Sea side of Chōshū domain, Kyushu whaling was not confined to just one domain's territory or management. This led to a more complex system of compromise over territorial access and regulation between groups than in the other regions. These whaling groups also serve to demonstrate that a large domain with a long coastline exposed to whale migration routes was not an absolute requirement for the success of coastal whaling, although these were the conditions for three out of the four major whaling regions. The large numbers of whaling groups that succeeded in coexisting in the Saikai area likely benefitted from the fact that they were within a network of islands of different sizes. While in the other three major whaling areas, mountain lookouts had to be placed along the shoreline, in Saikai they were often situated on different islands, covering a cross-section of water surrounding the place where the whales were hauled ashore for processing.⁵⁶

This variety of geographical possibilities may also explain why net whaling did not smoothly and completely replace harpoon whaling in the Saikai area. There are records in the *Ōmura gōsonki* (大村郷村記) that the second Fukazawa Gidayū, leader of the largest Saikai whaling enterprise of the mid-Tokugawa period, introduced net whaling as learned from Kumano whalers in 1678, at their site in Arikawa in the Gotō Islands. It was introduced again in two of

55 Torisu Kyōichi, *Saikai hogeigyōshi no kenkyū*, (Fukuoka-shi: Kyūshū Daigaku Shuppankai, 1993), p 81.

56 See for example maps on pages 106, 109, 113, 120, etc. showing work around Ejima in Sueta Tomoki, *Hansai hogeigyō no tenkai: Saikai hogeito Masutomi gumi* (Tokyo: Ochanomizu Shobō, 2004).

their other whaling sites in 1683 and 1684.⁵⁷ Even though this large group managed to shift relatively smoothly to the new technique, not everyone followed immediately. Another of their records notes that harpoon whaling still took place out of at least one of the whaling villages in 1735.⁵⁸ Whaling historian Sueta Tomoki's analysis of this delayed shift is that the practice of net whaling was far more expensive in capital outlay than harpoon whaling, and so if groups could not get outside support to finance the acquisition of nets and other required equipment, they were forced to continue harpoon whaling.⁵⁹ Furthermore, new groups after the introduction of net whaling to the area did not always begin with net whaling techniques. The Masutomi group, which eventually became the major player in this area in the latter part of the Tokugawa period, began harpoon whaling in Tateura, Ikitsukishima in 1724. They did not shift to net whaling until 1733. Before this point, they found their steady yearly catches of 22 whales per year begin to decline to 17, 16, then 15 whales per year. Thus, perhaps due to some worry from the harpooners about this trend, perhaps because they had been simply biding their time and building up capital to be able to move to a better site for net whaling, they moved whaling sites in 1727 to Misakiura (still on Ikitsukishima) and switched to net whaling.⁶⁰

Eventually, the groups run by Masutomi in Hirado and Karatsu moved south into Gotō domain areas and took over these groups. This led to the specialization of the Gotō groups into spring whaling to catch whales migrating north, because Hirado domain's groups caught whales in winter as they swam south before they arrived in Gotō territories. Even so, this competition was not fierce enough to wipe out the Gotō groups, because it was such a rich area for whaling to begin with. It is difficult to do monetary conversions over the whole period during which any

57 As cited in Sueta, *Hansai hogeigyō no tenkai*, p 46.

58 Ibid, p 49, citing the sixth scroll of *Ōmura gōsonki*, p 307.

59 Ibid., 49-50.

60 Ibid., 52-55.

whaling group was operating, but over the course of 142 years, Masutomi group records indicate they earned over 3.3 million ryō. This Hirado-based group became famous in part because they became so rich off of whaling. They were famous enough to catch the eye of Ōtsuki Gentaku (大槻玄沢) and his cousin, who produced the influential book *Geishikō*, and gained even more attention after their publication of the book *Isanatori ekotoba* explaining Masutomi whaling in 1829.⁶¹ However, the success of the large whaling groups of the Saikai area such as the Masutomi could not be easily replicated outside the specific conditions in northern Kyushu. This was proven when the bakufu tried to set up whaling stations in Ezo (a vastly different whaling environment) based on the recommendations of Masutomi whalers in the early 1800s, hoping to earn a lot of money, but also to set out territorial claims to compete with Russia (see Chapter 5).⁶²

Idiosyncratic Whaling Practices: Isolated Whaling and Beaked Whales

These four major centers of organized whaling groups were not the only places to practice whaling during the early modern period. A small-scale form of net whaling (using fixed nets rather than those set from a boat) took place in Ineura in Kyoto Prefecture from 1657 through sometime in the 1910s.⁶³ There were also areas such as the villages on either side of the Bungo Channel between Kyushu and Shikoku (in current-day Oike and Ehime Prefectures, respectively) which erected monuments to the occasional whale caught there, usually for the stranded or otherwise weakened whale rather than the product of organized whaling efforts.⁶⁴ Even a widespread technique such as net whaling was not used in all areas. While most of the Edo-period records for whaling on the Bōsō peninsula seem to have been destroyed, the fact that

61 Both of these publications will be discussed in more detail in Chapter 3.

62 Mori Hiroko and Miyazaki Katsunori, "Bunka 5, Ōtsuki Seijun 'Geishikō' seiritsu no seijiteki haikai," *Seinan Gakuin Daigaku kokusai bunka ronshū* 25, no. 2 (2011).

63 Nakazono and Yasunaga, *Kujiratori emonogatari*, p. 34.

64 For more information about these whales, see Chapter 4.

whaling there focuses now and appears to have focused for some time on Baird's beaked whales (*Berardius beardii*) rather than baleen whales makes this one area which did not shift from harpoon whaling to net whaling. While most beaked whales are smaller than right, gray, or humpback whales, Baird's beaked whales are the largest of the beaked whale species (Family Ziphiidae) and reach an average of 9-11 meters long, only slightly smaller than the average 13-meter-long adult humpback whale. Thus, catching one of these whales would be approximately comparable (in the amount of whale acquired) to hunting the more popularly targeted species of baleen whales. However, their habitat and habits are quite different, and limited their availability as coastal whaling targets in the early modern period to the area around the Bōsō peninsula. This is a species that could be hunted with harpoons, rather than requiring net entanglement to slow them down enough for capture, so there would have been no pressure to change techniques unless the population was diminishing.

The fact that beaked whales are not generally a whaling target in other places may have contributed to the ability of Bōsō whalers to continue their hunts into the modern era, as there was far less pressure on their population of target animals than on the populations of right or humpback or gray whales also hunted by British and American whalers and by many whaling groups along the coast of Japan. Unlike the baleen whales targeted by early modern whalers, beaked whales are usually a deep-ocean species and do not have the same coastal migration patterns that made baleen whales tempting targets along the Tsushima and Kuroshio currents. Instead, the population nearest Japan appears above a latitude of 34° N, along the Sagami Trench and north of where the Kuroshio current generally turns east into the Pacific. They arrive in the deep waters near the Bōsō peninsula in the spring and head for Hokkaido in late summer, returning in the fall before vanishing to unknown wintering grounds. They are found in much

deeper water on the continental slope than baleen whales, as their prey is found at the bottom in waters between 1,000 and 3,000 meters depth, and that and their more northerly range limited the area in which they were hunted to the Bōsō peninsula during the early modern period.⁶⁵

Therefore, although the practice of hunting these whales was part of the history of whaling in the period, it was a side project far less connected to the network of whalers and whaling in areas further south. I mention it here to demonstrate that the whaling groups from Kumano to Kayoi were not the only people interacting with whales at the time, and that it is important to distinguish what species of whale is being hunted to determine the full picture of how people interacted with the animals off their coasts.

The 19th-Century Decline of Whaling Groups

While I have inferred a decline in whale populations available to different groups such as the whalers in Ise Bay, or a decline in availability of right whales causing the shift to net whaling to make use of new target species, there is unfortunately no direct evidence for the sizes of whale populations before the nineteenth century. Even then, the only records of population size come from whalers' logs of how many they caught. However, there is strong evidence from American whalers that they decimated right whale populations (and likely also sperm whale populations) after they became a target of Pacific whaling efforts in 1835. American whaling effort was concentrated north of Japan, in the whales' summer feeding grounds. Between 1835 and 1849, American whalers brought back oil and baleen from an estimated 10,985 to 11,455 right whales. To this number should be added an unknown number of whales struck by harpoons but lost before they could be processed. Whatever the original population size, it is clear that this effort

⁶⁵ Boris M Culik, "Berardius bairdii, Baird's Beaked Whale," Convention on Migratory Species (CMS/UNEP) Secretariat, http://www.cms.int/reports/small_cetaceans/data/b_bairdii/b_bairdii.htm.

eliminated a majority of the Pacific right whale population, because in the four years from 1850-1854 the American whaling fleet was only able to take 951 to 1,364 right whales, or less than 10% of the previous catch, despite maintaining the same amount of catch effort as in earlier years.⁶⁶ This sudden intense pressure on right whale populations was felt by Japanese whalers in the mid-nineteenth century, although some whaling groups were clearly having trouble maintaining their catch before this point. Because whales were not harvested on nearly the same scale by Japanese coastal whalers as by American pelagic whalers, the drop in whale catch can be subtle, especially for species less targeted by American whalers. For example, an average take for a single group of Tosa whalers was 4-6 gray whales per year in 1800-1865, but 3-4 per year from 1874-1896. The average number of humpbacks taken was 12-14 for the earlier period, nearly 6 for the later. The right whale population was clearly affected the most, with an average of 7 whales caught per year in 1800-1835, whereas after Americans entered the Pacific, Tosa whalers caught an average of only one right whale a year from 1849 to 1896.⁶⁷

The number of whales successfully caught by the Koza whaling group was quite variable in the nineteenth century, but it appears to have declined through the 1830s with the exception of a good year in 1835. Catches showed some recovery through the 1850s, with the exception of a year with no catch in 1845, before crashing in 1865 (Figure 1.5). Given that the American pelagic whaling take declined between 1850 and 1854, the good years during the 1850s for Koza may have been related to a shift in the normal ranges of whale populations in the Pacific as they

66 Before the North Pacific population of right whales became a target in the mid-nineteenth century, it contained at least 10,000 whales. The exact number remaining today is unknown, but a rough estimate for the entire Pacific Ocean is around 900 whales, with likely less than a few hundred in the western Pacific. For a good summary of the status of the North Pacific right whale, see National Marine Fisheries Service, "Endangered and Threatened Species: Proposed Endangered Status for North Pacific Right Whale," *Federal Register* 71(2006); catch data from Scarff, "Historic Distribution and Abundance of the Right Whale (*Eubalaena Glacialis*) in the North Pacific, Bering Sea, Sea of Okhotsk and Sea of Japan from the Maury Whale Charts. (Iwc Sc/42/Ps-3).", 489.

67 Hideo Omura, "History of Gray Whales in Japan," in *The Gray Whale : *Eschrichtius Robustus**, ed. Mary Lou Jones, Steven L. Swartz, and Stephen Leatherwood (New York: Academic Press, 1984), 57-77.



Figure 1.5: Number of whales successfully caught by the Koza whaling group, 1824-1867. From Table 34 in Kasahara, *Kinsei gyoson no shiteki kenkyū*, 216-217.

avoided areas of concentrated whaling.⁶⁸ Because most large whales do not have calves annually, such a short-term increase in coastal whale populations would only have reflected a redistribution of whales, not overall population growth. Japanese whalers taking advantage of the greater availability of coastal whales would only have exacerbated the overall population decline, and this could explain the greater variability of success after 1859. The Koza whalers who had sent letters describing the potential destruction of their whaling group due to hardship in 1866 sent another plea for help in 1872.⁶⁹ In order to justify government support, one letter even

⁶⁸ The only records we have about historical whale populations come from whaler's records, so any distribution is a very vague guess based on the intersections of whales with whaling effort. Even today, full distributions and migration patterns of whales are rarely known. The decline in American catches is noted in Scarff, "Historic Distribution and Abundance of the Right Whale", p 489.

⁶⁹ The first set of petitions is in Wakayama kenshi hensan iinkai, *Wakayama Kenshi. Kinsei Shiryō*. Vol. 4, section 4, source 7, p 732-739. The second letter is in Wakayama kenshi hensan iinkai, *Wakayama Kenshi. Kin-gendai shiryō* (Wakayama-shi: Wakayama-ken, 1976), Vol 5.5, section 5, source 1, p. 670-671.

claimed that "the case of whales is, of course, a part of the national interest."⁷⁰ The authors of the letter did not explain exactly what kind of "national interest" (*kokueki* 国益) whaling contributed to. Possibly they referred to the potential for high tax payments in good whaling years: in the unusually successful year of 1857 (20 whales caught), the Koza whaling group had a net profit of 253 silver kan, over 420 times the amount an average farmer could earn from cash crops in a year.⁷¹

Whatever the exact movements of whale populations in response to pressure from American and British whalers in the Pacific, Kumano-area whalers in the nineteenth century certainly were having problems. In fourteen of the twenty-one years between 1823 and 1844, the Koza Whaling Office operated with a deficit, for a cumulative fourteen-year deficit of 191 kan 224 monme of silver (about 3824 ryō at government standard conversion rates, or the entire yearly wages of approximately 145 tradesmen).⁷² By the 1860s, the lack of whales was severe enough that the two-year deficit from 1864 to 1866 exceeded 100 silver kan (about 2000 ryō), and in 1866 the Koza Whaling Office published a notice indicating possible foreclosure. The 271 whalers belonging to the office had to petition to borrow 100 koku of rice from the domain that year to prevent starvation. At that point they began to experiment with borrowing money from merchants outside of Koza.⁷³

On top of these difficulties, there was a major earthquake in 1855 that affected villages all along the Kumano coast. The tidal wave that hit Taiji after this earthquake destroyed the whalers' homes, the processing sheds, and much of their equipment. It also washed away the

70 "鯨魚之儀者素より御国益之御一端二有: *geigyo no gi wa so yori gokokueki no goittan ni aru*", Wakayama kenshi hensan iinkai, *Wakayama Kenshi. Kin-gendai shiryō* Vol 5.5, section 5, source 2, p. 672.

71 Kasahara Masao, *Kinsei gyoson no shiteki kenkyū : Kishū no gyoson wo sozai to shite* (Tokyo: Meicho Shuppan, 1993), p 216. Monetary conversion based on Susan B. Hanley, "A High Standard of Living in Nineteenth-Century Japan: Fact or Fantasy?," *The Journal of Economic History* 43, no. 1 (1983).

72 Wage-equivalency based on Hanley, "A High Standard of Living."

73 Wakayama kenshi hensan iinkai, *Wakayama Kenshi. Kinsei*, p 713. The unit of 1 koku of rice was supposed to feed one man for one year, and was equal to about 180 liters of rice.

sheds and equipment belonging to the Koza whaling group.⁷⁴ The money for reconstruction came from funds that had been put aside to pay taxes, which only increased the poverty of Taiji inhabitants.⁷⁵ Apart from this large-scale natural disaster, there were also more localized problems, such as the 1830 fire which destroyed all of the Koza whaling sheds and equipment.⁷⁶ The first stages of this pressure that led to an early nineteenth-century management crisis are detailed by two records written in 1844, supposedly as a memorial to the four humpback whales caught after a long dry spell in 1827. These two histories note that the Kishū domainal management of Koza whaling began in the Manji era (1658-1660), reporting to various domainal regulatory offices for fisheries until 1808 or 1810 when they had to go on hiatus, having exhausted their means of support. The histories complain that this led to starvation as the price of rice increased, and even though they became desperate enough to try whaling again in 1823, Koza whalers failed to catch anything until the whales whose catch they celebrated in 1827.⁷⁷

Interestingly, the second of these two sources points out some of the environmental factors which contributed to Koza's problems. The source notes that "they had no fields or mountain forests" to make a living with, just fishing for sardines, which were not available from the tenth month to the third month (when, conveniently, whales appeared in good years).⁷⁸ The villagers had to beg for aid so much that the repeated petitions lost weight. They even received one reply that instead of worrying about continuing whaling to support themselves, they should open up the sandbanks in the middle of the river mouth that Koza was built on and turn them into fields. But the source notes that this was not a reasonable solution when they had to buy farming implements and learn farming techniques from elsewhere, so their hardship continued until they

74 Kushimoto chōshi hen-san iinkai, *Kozachō shiryō*, p 602.

75 Takigawa Teizō, *Kumano Taiji no denshō*.

76 Kushimoto chōshi hen-san iinkai, *Kozachō shiryō*, Sources 1.1 and 1.2, p 1-3.

77 Ibid., sources 1 and 2.

78 Ibid. source 2, direct quote is from p 2: 古座浦之儀者田畑山林等無之.

were finally granted permission to go out whaling in 1824.⁷⁹ In whaling villages without a location on the mouth of a river, such a suggestion would not have been possible, but it does point out the way in which domainal officials could consider more land-based solutions to their problems rather than trying to find ways to make the villages' maritime endeavors more profitable or sustainable.

Other whaling regions were also affected by the Pacific whale population crash. The catch records for four different groups under Masutomi management in the Saikai area from 1764-1778 were variable but did not show an overall decline in whales.⁸⁰ However, by the early decades of the nineteenth century (between 1805 and 1823), there was a sharp drop in whales taken from a total of nearly 140 per year to less than 20 by three groups under Masutomi's direction.⁸¹ The Masutomi group was actually an umbrella management for a number of smaller groups in different territories in the waters from around Iki and Tsushima down to the Gotō Islands. One of the important families in this enterprise was the Yamagata (山形) family, whose records contain a number of cases bemoaning the lack of whales "recently", without, unfortunately, including a year. Still, many of these were signed by Tatamiya Seiemon (畳屋勢右衛門). Other instances with dates which note this name in the Yamagata family records, include two from 1797 and 1803, then a larger set from the years between 1833 and 1854.⁸² There is a large enough gap between the two that they might be two people with the same name, rather than a continuous management by one person. Since the majority of the reports were in the middle of the nineteenth century, it seems likely that the greatest hardship and lack of whales

79 Ibid. source 2.

80 See graph on p 92 of Torisu, *Saikai hōgei no shiteki kenkyū*.

81 See graph on p 191 of Ibid.

82 The source from 1797 is source #37, the one from 1803 is source #46, and there are at least nine notes for lack of whales (75, 83, 133, 134, 136, 142, 152, 157, 158) along with five with his name and an actual year; Fukuoka Daigaku sōgō kenkyūsho, *Kinsei Saikai hōgeigyō shiryō: Yamagata-ken bunsho*, vol. 8 (Fukuoka-shi: Fukuoka Insatsu, 1994).

was felt around this time, with declining catches from the drop noted in 1823 onwards through the following three decades.

This is also the time when American whaling efforts in the Pacific were strongest, so it is good evidence that Kyushu whalers were just as affected by this as the Kumano coast or Tosa whalers. In Chōshū they also felt the effects of Pacific whaling, with the catch by decade of around 50 right whales dropping in 1851-60 to a total of 20, and then in the following decade to nothing, even though the numbers of fin whales (not a target of American whaling efforts in the mid-nineteenth century) they were able to catch rose.⁸³ This decline in whale catches in all the major whaling regions of Japan in the late nineteenth century, along with increasing contact with American and other whalers, led gradually to the modernization of the whaling industry as whalers first tried to adopt cutting-edge American pelagic whaling methods including shoulder-mounted harpoon guns, and then, by the turn of the century, the Norwegian bow-mounted harpoon guns on motorized boats, which involved a very different methodology than the traditional coastal whaling discussed above. The end of the type of organized whaling practiced in early modern Japan, and the different environment in which its replacement was practiced, will be considered in more detail in Chapter 5.

Conclusion: Environmental Whaling History

Japanese whaling in the early modern period, while conducted from small boats rather than the large ships that travelled the globe from America and Europe, was hardly a small-scale enterprise. Residents of fishing villages were legally members of the *hyakushō* (peasants), a category that does not immediately bring to mind non-agricultural occupations. However, it

⁸³ Nakazono Shigeo, *Kujira tori no keifu : Gaisetsu Nihon hogeishi* (Nagasaki-shi: Nagasaki Shinbunsha, 2001), p 107.

should be clear from this chapter that they still were an important part of society rather than simply small, isolated villages with little impact on the rest of the country. I have focused on the whaling industry as the largest and most interconnected fishery, which therefore has a high likelihood of broad influence through its use of a great deal of manpower and monetary resources. However, other fisheries should also not be forgotten or marginalized as only important to small local villages. As David Howell shows in his study of the herring fishery in Ezo (later Hokkaido), some of these fisheries could be central not just to local economies but to a whole regional system, from the fishermen themselves to the farmers using their catch as fertilizer.⁸⁴ Anthropologist Arne Kalland provides a brief introduction to some of the other important fisheries in Fukuoka such as sardines, sea bream, squid and tuna, but further research on major fisheries throughout Japan is also necessary to provide a full picture of the ways in which the coastal marine environment was integrated into early modern Japan.⁸⁵

Environmental historian Conrad Totman notes that the near doubling of the Japanese population in the seventeenth century, at the prosperous start of the Tokugawa peace, led to resource depletion and to associated searches for "ways to maximize the biosystem's immediate utility."⁸⁶ Some of these new resources came from the ocean, whether used for food directly (whale meat, bonito) or for fertilizer and agricultural support (whale bones and oil, sardines and herring). The search for and widespread utilization of these new marine substances shows the importance of including coastal waters in our conception of the territory of Tokugawa Japan. Totman argues that the restriction on foreign travel under the Tokugawa rule, along with shifts in land use and coastal shipping, led to an increase in specialized fisheries.⁸⁷ An important

84 David L. Howell, *Capitalism from Within: Economy, Society and the State in a Japanese Fishery* (Berkeley: University of California Press, 1995).

85 Arne Kalland, *Fishing Villages in Tokugawa Japan*, Nordic Institute of Asian Studies Recent Monographs ; No. 69 (Honolulu: University of Hawaii Press, 1995).

86 Conrad D. Totman, *Early Modern Japan* (Berkeley: University of California Press, 1995), p 234.

87 Ibid., p 273-4.

consequence of the development of such fisheries, including whaling, was that they could provide not just replacements for nutrients that no longer were available in the soil, but also sometimes offered products with whole new effects, reshaping the culture as well as the consumption habits of the period. In the following chapters I will look at how the efforts of whalers to make the most of their new resource influenced the intellectual, religious, and material culture of a broad area of Japan during this period of intensifying organized whaling, as whales and their products were brought ashore and shipped to non-whaling areas.

Chapter 2

From One Whale, Seven Villages Prosper: Uses and Consumption of Whale Parts

Whales as the Sum of Their Parts

A proverb dating back to at least 1797, which often comes up in discussions of the importance of whaling, explains that one whale can promote the prosperity of seven villages.¹ But how, exactly, could a whale do this? And what scope does the proverbial "seven villages" actually refer to? For contemporary Japanese whaling, whale meat is usually presented as the most important product. Partly, this is because eating whales (rather than simply breaking them down for parts marketed commercially) is a practice characteristic of subsistence whaling cultures. Aboriginal and other groups for whom whale hunting is a necessary subsistence activity are allowed to continue their small-scale whaling practices even under the commercial moratorium imposed by the International Whaling Commission in 1986. In an effort to make Japanese whaling seem more like subsistence whaling and less like a modern commercial industry, supporters try to show consumption of whale meat to be a longstanding and culturally-important part of Japanese food customs. The problem with this argument, as the proverb's comment on prosperity shows, is that even traditional Japanese whaling was not a purely subsistence activity.

Early-modern Japanese whaling was a commercial enterprise. Whalers made use of as many different pieces of whales as they could to maximize profits, which were important to the prosperity of whaling villages generally located in places with few other options. Still, just

¹ *Kujira ippiki sore wa nanaura nigiwau* 鯨一疋それは七浦にぎはふ is the form of the proverb in Tessai Hirase and Mitsunobu (illus) Hasegawa, *Nippon sankai meibutsu zukai*, vol. 3 (Naniwa: Shioya Uhei, 1797), 16 reverse. In modern Japanese, it is usually rendered something like *Kujira ittō toreba nanaura nigiwau* 鯨一頭とれば七浦にぎわう, for example, in Kawano Ryōsuke, *Chōshū, Kitaura hoge no aramashi* (Nagato: Ōmura Insatsu Kabushiki Kaisha, 2005), 25.

because someone has access to whales, that does not mean the use that they will put them to is obvious. An interesting aspect to the business of whaling is the decision of what kinds of products should be made from the whale. Certainly, Japanese whalers did produce and sell a lot of meat, but they also profited from the sales of many other whale parts. This is quite different from the way that commercial whaling developed in the West. For the offshore commercial whalers of Europe or America, meat was not a product after the medieval period.² American whalers, in fact, specifically preferred not to eat whale meat when any other options were available.³ These pelagic whalers focused on the production of whale oil, used for lighting (both as candles and lamp oil, including for street lights and lighthouses) and for lubrication in such places as factory cotton spindles.⁴ Baleen was a side-product, used beginning in the sixteenth century to stiffen clothing such as corsets, bustles and hoop skirts.⁵ It became the most valuable product of the American whaling industry only after petroleum began to replace whale oil in the 1880s.⁶ In Japan, whale oil was also used for lighting, although only in lamps. The growth of the city of Edo led to a dramatic increase in the demand for lamp oil, to the point that whale oil for lamps was shipped there from over 750 miles away, from the Hirado whaling group in Kyushu.⁷ Just as whale oil lighting was replaced in Europe and America with gas lamps and kerosene,

2 The Basques, who began whaling sometime around the year 1000 CE, did sell meat and blubber in Western Europe, but Ellis notes that "the meat was fed to the poor and to the ships' crews" which would indicate it was not a preferred food by those who had access to better options, except perhaps during meatless calendar days designated by the Catholic church. Richard Ellis, *Men and Whales* (New York: Knopf, 1991), 44.

3 Nancy Shoemaker, "Whale Meat in American History," *Environmental History* 10, no. 2 (2005).

4 Jeremy Zallen, "America Lucifers: Makers and Masters of the Means of Light, 1750-1900," Harvard University, 2014, Eric Jay Dolin, *Leviathan: The History of Whaling in America* (New York: W.W. Norton & Co, 2007), Ellis, *Men and Whales*, Lance E. Davis, Robert E. Gallman, and Karin Gleiter, *In Pursuit of Leviathan: Technology, Institutions, Productivity, and Profits in American Whaling, 1816-1906* (Chicago: University of Chicago Press, 1997), 342-68.

5 Lynn Sorge-English, *Stays and Body Image in London: The Staymaking Trade, 1680-1810* (London: Pickering & Chatto, 2011) only discusses stays (a type of stiffened bodice) from 1680-1810, but the central function of whalebone (baleen) in these garments arises repeatedly in her analysis. Ellis, *Men and Whales*, 51 also provides a reference to "what is probably the first accurate description of the baleen plates of a whale" from Des Monstres Marins, by Ambroise Paré in 1573, which notes their use in Spanish farthingales, which stiffened skirts.

6 Anonymous, "Petroleum and Whalebone: From the London Times," *The New York Times*, January 13, 1883.

7 Nakazono Shigeo and Yasunaga Hiroshi, *Kujiratori emonogatari* (Fukuoka-shi: Gen Shobō, 2009), 145-6.

whale oil did not light Edo homes for the entire Tokugawa period. As methods for producing plant-based oils were developed, the smellier whale oil fell out of favor with higher-ranking people who could afford to be more selective with their lighting.⁸ Whale oil lamps were also used extensively in mines, such as Besshi on Shikoku, until rapeseed oil replaced it as an inexpensive yet effective light source.⁹ In contrast to Western whaling, other whale products and uses were far more influential in Japan than lamp oil.

In this chapter, I will discuss the many different ways that all parts of whales were used, and the impact their use had on Japanese society. The fact that whales were so large, and had many uses beyond just being sources of meat, was a foundation of the success of the whaling groups discussed in the previous chapter. Still, the products of whales had more than just economic importance. People living inland might not have much opportunity to see an entire whale in person, but they were quite likely to encounter some of the parts of whales that circulated far beyond coastal whaling villages. First, I will consider the parts of whales consumed as food, which includes not just whale meat, but also skin and blubber. The following section will discuss some of the ways that the consumption of meat in general was linked to whales. The strongest tie was through a euphemism for wild game meat that categorized it as a type of whale, showing a complex interrelationship between marine food products and terrestrial ones even in areas where whale meat itself was not available. Next, I will focus on other ways that whales indirectly provided food, through the use of parts like ground whale bones as agricultural fertilizer. Such marine fertilizers were essential in efforts to support a growing population through the expansion of early-modern agriculture into marginal areas. Other parts of whales were also necessary in the success of cash crops like cotton. The next section will also

⁸ Nakazono and Yasunaga, *Kujiratori emonogatari*, 146, from the *Honchō shokkan* which commented that whale oil was better than fish oil, but not used when people could get flaxseed oil instead.

⁹ Ibid.

discuss the impact of whale products in agriculture, focusing on one of the most curious and widespread uses of whale oil: as an insecticide for rice crops. Finally, the section on baleen moves away from the realm of agriculture into popular culture. Here I will look at some of the specialized cultural products that could be made with this early-modern substitute for plastic. The integral role that baleen springs played in *bunraku* (文楽) puppets and *karakuri* (絡繰) dolls was an invisible but widely influential use of whale parts. These investigations of whale parts help show how much the people of early modern Japan depended upon the resources available in their marine environment, and how diverse and influential the products from whales in particular were.

How to Eat A Whale: Cookbooks

Japanese consumption of whale meat today is a contentious and complex political issue related to the modern global whaling industry and the current moratorium on commercial whaling. Part of the reason this issue is so contentious is because the former whaling nations of Britain and the United States did not consider whale meat to be a reasonable product or food. Historian Nancy Shoemaker discusses some of the ways that tastes for whales have differed globally and across eras, including why whale consumption never became popular in America. She points out that American whalers would sometimes eat whale meat while out at sea, but "they never truly thought of it as 'meat'," complaining that it could not replace real meat rations despite chronic scarcity of good food aboard ship.¹⁰ They thought whale meat was only a food for uncivilized peoples, not something which ought to be part of their normal diet once ashore.¹¹ However, there are other cultures from the Arctic to the Equator where people have historically

¹⁰ Shoemaker, "Whale Meat in American History," 279.

¹¹ Ibid, 280-1. in particular discusses the way that white whalers looked down on primitive people who were willing to take whale meat and organs off their hands.

eaten whales, including the influential whaling nation of Norway, so it should not be thought inherently strange that whales might be part of the Japanese diet.

Rather than asking why the Japanese ate whales, a better question is how did they eat them? Whale meat, *geiniku* (鯨肉), was actually a rather broad term used not just for the whale muscle that is an equivalent to other meats like beef and pork, but also for blubber and skin attached to that muscle. "White meat," *shironiku* (白肉), was in fact more fat than meat, since the white part was purely blubber. These varieties of meat were not the only edible portion of the whale, either. There are some scattered references to whale as a delicacy eaten by members of the Kyoto court or high-ranking samurai before the Tokugawa period, generally as a soup, which might have contained meat or some other part of the whale.¹² But the only real evidence we have for how people might have consumed the larger amounts of meat made available by the increased whaling efforts of the Tokugawa period comes from a cookbook, *Geiniku chōmihō* (鯨肉調味法). This book was published as a supplement to *Isanatori ekotoba*, a description of whaling techniques and processes, printed under the sponsorship of the Masutomi group in 1832. While consumption practices may well have changed in the couple of centuries between the start of organized whaling in Japan and the publication of this cookbook, it does at least give us somewhere to start. But because this cookbook was published so late in the period, some context about its precursors and what audiences they were intended for is necessary to understand what can be inferred about cooking with whale parts from the contents of *Geiniku chōmihō*.

The earliest known book to contain instructions about basic, daily cooking procedures was a work called *Ryōri monogatari* (料理物語), which first appeared in 1643. By 1664 it had

¹² This practice was reflected in delicacies offered by Ise Bay whalers to the court in the early history of organized whaling. Wada Tsutomu, "Kinsei hogeigyō no keiei ni tsuite - Ise-wan • Kumano-nada engan wo chūshin ni," *Fubito*, 57, no. 1 (2005): 33 cites these instances from the *Harutoyoki* without further reference to specifics of this source.

gone through multiple printings and two editions. Its original title may have been *Ryōri hiden shō* (料理秘伝抄), a title which better indicates how it was related to a number of similar works explaining trade secrets which began appearing at this time.¹³ While its anonymity makes it difficult to determine how widespread the readership of *Ryōri monogatari* was, it does contain information about whale meat in the chapter entitled "The art of cooking and preservation." The cookbook's method of preserving whale meat appears among other techniques such as how to prepare one-night sweetfish sushi or young bamboo shoots.¹⁴ There is also a recipe for whale soup, which made use of preserved whale meat.¹⁵ Wherever this cookbook was originally written, it does not appear to be directed at people who could purchase fresh whale meat. Most likely, it was part of the cooking tradition for members of the court in Kyoto, where feasts with unusual delicacies were expected.

During the Genroku period (1688-1704), compilation-style cookbooks began to appear. These were books written by professional cooks, and used by cooks employed by high-ranking samurai. As the popularity of tea houses and the tea ceremony increased, famous members of samurai families began to produce cookbooks as well, especially those who had become interested in tea ceremony. Both of these kinds of cookbooks were produced to convey expertise and instruction to people who would be using that information in their own cooking. However, by the latter part of the Edo period cookbooks were being produced for entertainment rather than practical instruction. This shift from cookbooks detailing local specialties (*ryōri sankaikyō* 料理山海郷) or ones with instruction on rare delicacies (*ryōri chinmi shū* 料理珍味集) to *ryōrihon* (料理本) was part of the development of a town-centered culture and the rise of Edo as a cultural center. For cookbooks, the result was a new kind of book after about 1750 which was based not

13 Harada Nobuo, *Edo no ryōrishi: Ryōribon to ryōri bunka* (Tokyo: Chūō Kōronsha, 1989), 24-7.

14 Ibid., 24.

15 Nagayama Hisao, *Tabemono Edo shi* (Tokyo: Shin Jinbutsu Ōraisha, 1976), 39.

on the practical aspects of cooking, but on the famous places that different foods were associated with. These kind of cookbooks capitalized on people's interest in travel and local specialties. The association of famous locations and temples with particular foods was not always exclusive. In a similar process to the one by which hamburgers need not be made in the town of Hamburg, these local specialty names could sometimes become a generic label for any forms of such foods wherever they were produced.¹⁶

After the appearance of these collections of local specialties, an even more specific form of cookbook appeared. These were cookbooks devoted specifically to only one type of food, like *Geiniku chōmihō*. The first of these specialty cookbooks was called *Tōfu hyakuchin* (豆腐百珍; 100 Tofu Delicacies/Rarities). As the title indicates, this book was not merely a specialized cookbook to help people decide what to do with their extra tofu, but was instead meant to take advantage of the interest in curiosities and the exotic as its selling point. After its publication in 1785, there was what Harada Nobuo (原田信男) refers to as a "*hyakuchin* boom (百珍ブーム)." ¹⁷ This was a proliferation of 100-delicacies-style books (which may or may not have provided as many as a hundred different examples). *Geiniku chōmihō* was not published during the peak of the *hyakuchin* boom, and it does not follow the format of those cookbooks beyond its focus on one food. However, Harada argues that books which listed multiple ways of cooking just one thing, such as the 1802 *Meihan burui* (名飯部類) focused on rice, could also be referred to as *hyakuchin*-style books.¹⁸ The whale meat cookbook is similarly a *hyakuchin*-style book, published because many of these whale meat dishes were unique, strange, or unknown to the book's audience. As a supplement to *Isanatori ekotoba*, with its extensive description of one of the largest and most successful whaling companies in the Edo period, *Geiniku chōmihō* could

¹⁶ Harada, *Edo no ryōrishi*, 106-7.

¹⁷ Ibid., 124.

¹⁸ Ibid., 128-9.

have been intended as an advertisement for the products of the whaling group. This purpose seems far more likely than any intent for it to be a practical cookbook. *Geiniku chōmihō* is divided into 73 sections, explaining the different parts of the whale and the method or methods best used to cook them, but it does not contain very detailed descriptions of the actual process of cooking. For example, most entries are vague about not just the amounts of ingredients, but also the time taken to boil, fry, or otherwise prepare the food.

If this whale cookbook was not really intended to be a practical guide to cooking whale, then it is not a very good guide to what people did with the whale meat that they bought. But before looking more closely at the buying and selling of whale meat and where it might have gone, there is another question about whale meat that needs to be answered. And that is why some people might have wanted to eat something that was *called* whale without it actually *being* whale.

How to Eat A Whale By Eating Something Else: Yamakujira

The spread of shops selling *yamakujira* (山鯨) or "mountain whale" meat in the nineteenth century is a puzzling phenomenon (Figure 2.1).¹⁹ First of all, there is the question of why people would find it reasonable to refer to the meat of wild game such as boar, deer, or rabbit as if it were related to whale meat. While we now categorize whales as mammals, just like the wild game species that might be called mountain whales, whales were thought to be fish at the time, in Japan and elsewhere.²⁰ So, was the label *yamakujira* meant to disguise the fact that

19 Examples of references to mountain whale meat include woodblock prints showing restaurant signboards advertising *yamakujira*, such as Utagawa (Ando) Hiroshige's print "Bikuni Bridge in Snow", #114 of One Hundred Famous Views of Edo, 1858.

20 As discussed in the introduction. For a discussion of the problems of classifying whales as fish or mammals in early 19th-century America, see D. Graham Burnett, *Trying Leviathan: The Nineteenth-Century New York Court Case That Put the Whale on Trial and Challenged the Order of Nature* (Princeton: Princeton University Press, 2007).



Figure 2.1: View of a shop selling *yamakujira* (signboard on the left-hand side) from Utagawa Hiroshige, "Number 114: Bikuni Bridge in Snow (*Bikuni hashi setchū*)," One Hundred Famous Views of Edo (*Meisho Edo Hyakkei*), 1858.

people were eating meat instead of fish, by referencing the type of fish that it most closely resembled? A common explanation for meat taboos in Japan relies on religious proscriptions: either Buddhist moral objections to killing, or Shinto concerns with pollution related to contact with blood or death.²¹ But are these actually reasons why someone would disguise one meat under the name of another?

In fact, there is some evidence that Buddhist prohibitions against meat-eating during the Tokugawa period were thought to be important not because they involved animal death, but rather because meat had aphrodisiac qualities that clergy should be avoiding. The arguments for the fact that Pure Land Buddhist clergy were allowed to eat meat focused not on any link to death, but rather on concerns about their also being allowed to marry.²² Since this was the most popular Buddhist sect in the period, their lack of strict prohibitions on meat eating would indicate that Buddhist moral concerns about killing were unlikely to have driven the practices of the majority of the populace.²³ And although Harada argues that the early Tokugawa period was when the restrictions against meat eating were strongest, based in part on the fact that the late-seventeenth-century Laws of Compassion prohibited the abandonment of oxen and horses, this argument seems to rely more on the frequency of prohibition than on an analysis of whether the prohibitions were effective.²⁴ He does point out that references to meat-eating in diaries cannot be found between 1688 and 1736, after which there are increasing numbers of such references, especially beginning around the 1830s when there are many references to meat-based shops.²⁵ In his dissertation on meat consumption in early modern Japan, Pieter de Ganon argues that the

21 Pieter S. de Ganon, "The Animal Economy" (Princeton University, 2011) discusses this problem particularly in chapter 2, p 6-31.

22 Richard M. Jaffe, "The Debate over Meat Eating in Japanese Buddhism," in *Going Forth: Visions of Buddhist Vinaya*, ed. William M. Bodiford (Honolulu: University of Hawai'i Press, 2005).

23 Ibid., 259 points out that two-thirds of the Japanese Buddhists in the Tokugawa period belonged to Jōdō Shinshū.

24 Harada Nobuo, *Rekishi no naka no kome to niku: Shokumotsu to tennō, sabetsu* (Tokyo: Heibonsha, 1993), 257.

25 Harada Nobuo, *Edo no shokuseikatsu* (Tokyo: Iwanami Shoten, 2003), 39.

seventh-century Buddhist proscriptions against eating meat in Japan, which are often cited as the foundation for a rationale of an ongoing Buddhist objection to the practice throughout Japanese history, were intended to be temporary ritual abstentions as part of efforts to ensure healthy crops. They were not based on ideals of compassion or other moral objections to meat-eating, nor were they permanent or year-round.²⁶ Finally, if Buddhist morals were the reason to pretend to not be eating wild game meats, there surely would be better options than disguising the meat as another form of meat, even if the supposed fish (whale) it came from was a lower animal in the Buddhist hierarchy of being.

Shinto ritual pollution, *kegare* (穢れ), is likely to have had more of an influence on people's eating habits and on the use of euphemisms like *yamakujira*. The concept of *kegare* did have an influence on whether people could eat meat or not, but it did not demand total abstention. Instead, people who had eaten meat were considered ritually defiled for purposes of entering shrine grounds for specific periods of time. The amount of time that the pollution held was not standardized, and generally varied based on the type of animal: the most polluting animals were large domestic animals with legs, particularly what we would call mammals. Birds - smaller and with fewer legs - were less polluting, and the legless fish were least polluting.²⁷ Given that, although whales were definitely at the top of the size category, they were otherwise at the bottom of the pollution hierarchy with the other fish. Replacing a commonly eaten form of wild game like boar and venison, which tended to carry the longest pollution penalties, with the name of a fish would make sense if you wanted to eat game meat but were nominally concerned about the issue of *kegare*. Whale, rather than other forms of fish, may have been the chosen label

26 de Ganon, "The Animal Economy," 7-9.

27 Ibid., 13-4. See also Harada, *Rekishhi no naka no kome to niku*, 106-8.

because whale meat was most similar to wild game meat.²⁸ Of course, plausibility was not always necessary to rename meat as something else entirely: other labels for different presentations of meat included boar as tree peony (*botan* 牡丹), cows as plums, horses as cherries, deer as maple leaves, rabbits as a feather, and so on.²⁹

While religious proscriptions did exist, and in the case of *kegare* could well have guided the logic behind replacing the name of one kind of animal with another before eating the meat, they should not be given too much weight in prohibiting meat entirely. And Tokugawa-period commoners were unlikely to follow *kegare* prohibitions which became more important the closer one was to the emperor. As Shinto historian Takatori Masao (高取正男) points out, until the Meiji reorganization of Shinto, village shrine grounds could be found right next to gravesites.³⁰ I will return to the question of religious responses to death and how killing and eating whales and other animals fit into the religious structures of the Tokugawa period in Chapter 4. For now, it is enough to note that the renaming of game meat into a kind of whale meat probably is indeed a sign of concern about eating some animals, but it certainly did not stop people from eating their meat. Given how much more accessible wild boar and deer were to inland villages, this mountain whale might have been the most frequently-eaten and widespread form of "whale" meat in the late Tokugawa period.

Whatever the reasons for thinly disguising the origins of mountain whale before eating it, the most common references to *yamakujira* and specialized shops that cooked meat under this label are from the nineteenth century. Before specialized shops and cookbooks appeared, there

28 Katsushika Hokusai's "Hokusai manga", volume 14 has an illustration of a boar swimming through the waves like a whale which shows how strongly the tie between ideas of boar and whale were. Seiji Nagata, *Kachōga*, 5 vols., vol. 1, Hokusai Bijutsukan (Tokyo: Shūeisha, 1990), 115. See also the discussion of Bakin's kibyōshi in Chapter 3.

29 Kuboi Norio, *Zusetsu shokuniku • shuryō no bunkashi : Sesshō kindan kara inochi wo ikasu bunka e* (Tokyo: Tsuge Shobō Shinsha, 2007), 119.

30 Takatori Masao, *Shintō no seiritsu* (Tokyo: Heibonsha, 1979), 261.

are very few records discussing meat-eating outside of court banquets or the products of samurai hunting parties. Such references can first be found from the latter half of the eighteenth century, but they do not become particularly common until the Tenpō period (1830-1844). During this period, there were many *kemonodana* (獣店) or small restaurants that offered cooked wild game or pork, usually labelled as *yamakujira*. Harada supposes that the appearance of such establishments and the weakening of meat-eating prohibitions that accompanied them could have been linked to the domestic and foreign political troubles in the nineteenth century, but that does not explain why references would start to appear half a century before this point.³¹ Also, if the popularity of such restaurants was tied to a relaxing of social mores or political controls on social behavior, this relaxation was not strong enough to remove the desire to camouflage the meat under the label of "mountain whale." The rising popularity of meat-serving restaurants was also not directly linked to the success of whaling groups, since it was happening as those groups' catches were past their peak. Thus, by the end of the early modern period, whale meat was likely not encountered personally by most of the Japanese population but rather was known through sideways references like *yamakujira*, and through cookbooks that were perhaps more entertainment than practical publications.

Who Ate Whale Meat, and Where?

If whale cookbooks might not have been much of a practical manual for how to consume parts of whales, and many people were actually eating "mountain whale" rather than whale itself, it does not follow that whale meat consumption was more of a metaphor than a real practice. Distance from the processing sheds where whales were dismembered into component parts was an important factor determining what kind of meat would be available to consumers. Fresh,

³¹ Harada, *Edo no shokuseikatsu*, 39.

untreated meat was only able to travel so far before spoiling, so the market for it could not have been very far from the processing area. Salted meat and the scraps of meat that were left after having the oil boiled out of them would be available to a wider geographic audience, including people as far from Kyushu whaling groups as residents of Kyoto and Osaka: although residents of these cities could acquire whale meat from the Kumano area or from Shikoku, records indicate that the Masutomi group did ship preserved whale meat at least as far as the Kansai area.³²

Unfortunately, only a few scattered references to whale meat consumption generally remain from the Tokugawa period. A Kishū domainal official traveling in the Kumano area in 1717 noted: "On the way [to Taiji] I saw a rustic old village wife carrying a bamboo winnowing basket with some small packets.³³ Inside all of these was whale meat. I asked her, and she said that the other day in Taiji village, they succeeded in catching two large whales."³⁴ However, this is all the detail he provides about whale meat in his description of the village's whaling enterprise. Clearly people who were local to whaling villages were able to get whale meat to eat, but this type of record does not show just how far it might have been distributed. Whale meat was definitely sold in Kii's castle town of Wakayama, which is not far south of Osaka, so it is likely that whalers took advantage of the merchants in Osaka as well (Figure 2.2).³⁵ Beyond these few references, the extensive business records of whale meat sales from the Masutomi whaling group in northern

32 Koga Yasushi, "Saikai hogeigyō ni okeru geiniku ryūtsū: Bakumatsuki iki konaya no hanbai kōdō wo chūshin ni [Distribution of Whale Meat in Mid-19th Century Northern Kyushu Region]," *Bulletin of the Kyushu University Museum*, no. 9 (2011).

33 The word I have translated "packets", 苞, generally refers to leaves, which in this case appear to have been wrapped around pieces of whale meat, based on the following sentence.

34 Kikuchi Motoshū of Kii, *Sanzan kiryaku*, likely written sometime around 1802. Original text reprinted first by Taiji Gorōsaku in *Kumano Taijiura hoge no hanashi* and then with his work in Taiji Gorōsaku, "Kumano Taijiura hoge no hanashi," in *Kujira, iruka no minzoku*, ed. Tanigawa Ken'ichi (1937, 1997; reprint, Tokyo: San'ichi Shobō, 1997), 74-5.

35 Anonymous, "Tenpō nendai monourishū," (Wakayama Prefectural Library ms, c 1830-1844) depicts a man carrying *uwami kujira* or whale meat from the upper body amongst 219 various wandering vendors selling fish, meat, and other products in the Wakayama castle town's jōkamachi.

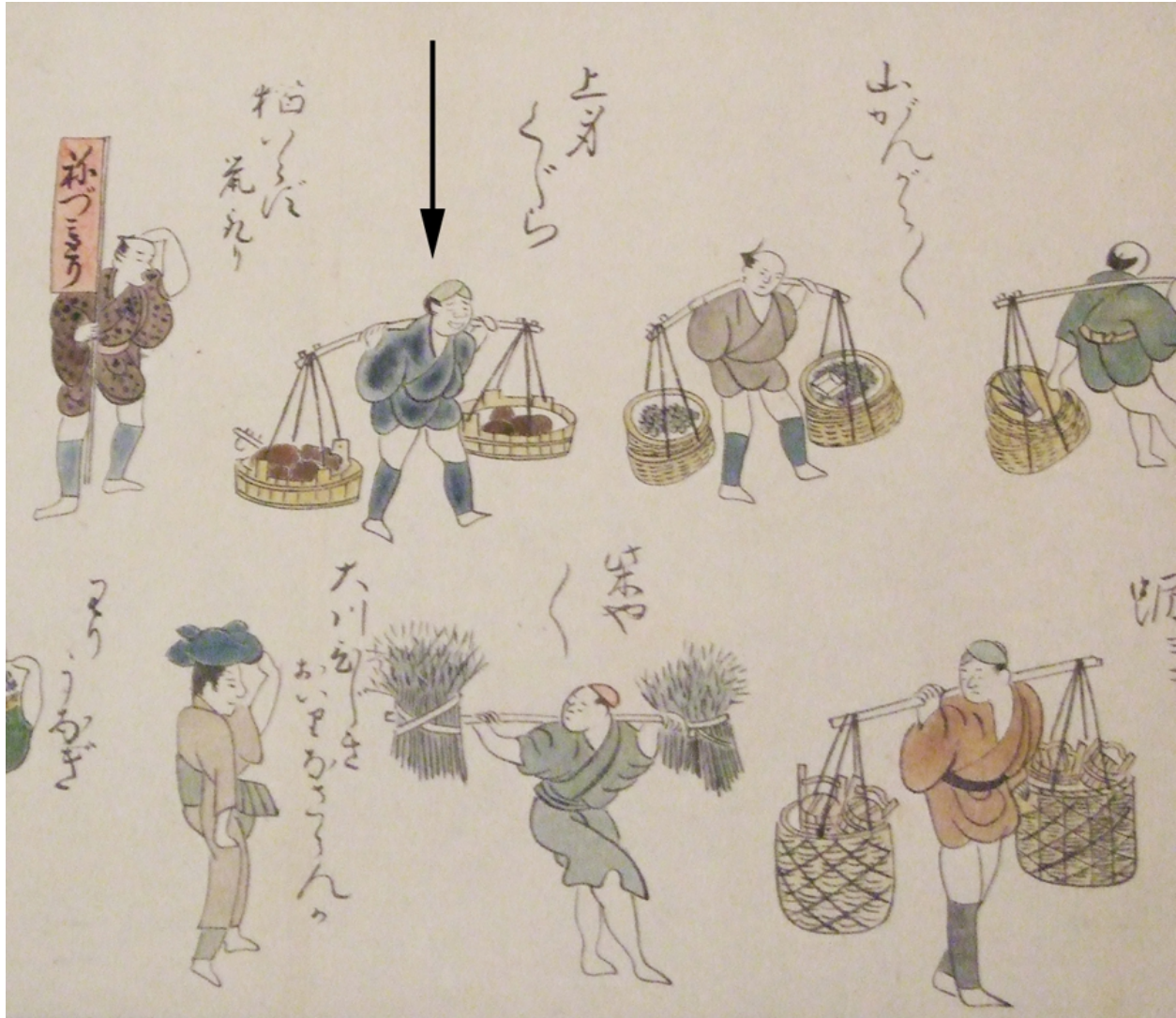


Figure 2.2: Assorted vendors selling food in the castle town of Wakayama, with the whale-meat seller marked by an arrow. Anonymous, "Tenpō nendai monourishū," c. 1833-1844. Wakayama Prefectural Library holding, displayed in the Wakayama Prefectural Museum.

Kyushu are currently the best evidence for what could be done with large amounts of whale meat. Since it is clear from the evidence in Chapter 1 that there was regular contact between the whalers in the Saikai area and other whaling areas, there should be some similarities in their production of whale meat and other parts. Although there were differences in the details of how the sales and distribution were organized, due to the different roles of domainal government in

these areas, a closer look at Kyushu whalers' sale of whale meat is our best stand-in for the possibilities in Japan as a whole.

Whaling historian Koga Yasushi (古賀康士) argues that oil production rather than the consumption of whale meat was the original motivation behind whaling in the Saikai area. This is supported by the fact that the custom of eating whale spread only after net whaling started to bring in larger numbers of whales to be disposed of. The focus of much of the scholarship on Saikai whaling has been on this lucrative oil trade and its marketing in Osaka. As Koga points out, however, this does not diminish the importance of the local whale meat trade. He focuses on the extensive business records from Iki island, where the processing sheds belonged to the Masutomi whaling group, to build a picture of whale meat markets. The local market for whale meat was somewhat distinct from the whaling group's long-distance market for oil and other parts. The management of the actual whalers, the *ōnaya* (大納屋) or whaling group, took approximately 60% of the whale, and gave the remaining portion to the *konaya* (小納屋), or managers of the processing sheds on the beach where they brought in the whale. In the case of the Masutomi group, at least, the *konaya* was the division that produced and sold most of the whale meat, while the *ōnaya* focused on oil.³⁶ The catch was divided because the *konaya* invested in the whaling group before the hunt, giving them necessary funds for equipment and other expenses before the whales could be caught and sold. In return, the *konaya* members were given a share of the catch, even though they did not send anyone out on the water to actually hunt the whales.

The *konaya* processed and sold whale parts in two ways, the first of which was through immediate sales on the beach as the whale was taken apart (*hamabai* 浜売). There is very little information about the details of this fresh meat trade, and the demand for whale meat for people

³⁶ Koga, "Saikai hogeigyō ni okeru geiniku ryūtsū," 48.

living near the whaling groups is difficult to determine. However, some Kyushu whaling scrolls hint at the popularity of whale meat in images showing whales being processed on the beach. In these crowded pictures, there is sometimes a small scene with an armed guard or two chasing off meat thieves (Figure 2.3).³⁷ The whaling groups in Kyushu paid taxes to their domains for the rights to go whaling in a specific area of water. Therefore, when local people who were not part of the whaling group happened to haul ashore a dead or dying whale, they were supposed to give it to the whaling group whose territory it was in. In at least some cases, locals seemed to have felt like they ought to be entitled to some of the meat, but the members of the whaling group would drive them off. In *Ogawajima geigei kassen* (小川島鯨鯢合戦), the explanatory text for such scenes notes that, "when the island's adults and children, carrying newly-sharpened knives, cut and stole meat [off the whale], this was called '*kandara* **かんだら**' and was a customary practice from long ago."³⁸ Whaling groups also worried about workers inside the processing sheds stealing meat. The Masutomi group even employed a guard to patrol their sheds, checking that the workers were not taking any meat. In other groups such as the Tsurō group (津呂組) in Tosa, the whale parts apportioned to different members of the whaling group were determined by individual jobs, so that a form of institutionalized distribution of 'free' shares of whale cut down on this concern.³⁹

Raw meat was not the only thing taken from the beach, whether stolen or sold directly at the processing sheds. Salted whale meat was often marked down in the same category as raw meat in the Iki account books, so it is difficult to say how much of the meat bought from the

37 There are two major versions of this type of image, with many copies made in different scrolls. One version is from the scroll *Shōni no rōgei ikken no maki*, a rough copy of which was made in *Ryūnan geiki* (Figure 2.2), for example. The other version, with the scene generally titled "Kashiura nayaba ni te geibaki no zu" is discussed from the source *Geigyō ranshōroku* Nakazono and Yasunaga, *Kujiratori emonogatari*, chapter 4, specifically p 247-8 with the image on p 194-5.

38 As cited in *Ibid.*, 133.

39 *Ibid.*, 134.



Figure 2.3: A close-up of the section of Kizaki Morisue, "Shōni no rōgei ikken no maki," in *Hizen Karatsu hōgei zūsetsu*, picture 14 (<http://dl.ndl.go.jp/info:ndljp/pid/2537195/14>), showing *kandara* thieves being chased away from a whale being cut up on the beach. The whale is off to the left. Courtesy of the National Diet Library of Japan.

konaya was preserved in salt first to keep it from spoiling. The vast majority of what they sold was meat in either of these two forms. They also boiled some of their share of the whale (presumably the lowest-quality pieces or those that were not immediately auctioned off) to extract oil, just as the whaling group management did. Once the oil extraction was finished, the boiled scraps were sold. The boiling was a form of preservation, and the scraps were shipped out to be sold in places as far as a week's sail away from Iki.⁴⁰ The amount of the whale that was sold directly as either raw or salted meat versus the amount from which oil was extracted, leaving oil and scraps to be sold, varied over the course of a whaling season. The calculation of what to ship

⁴⁰ Koga, "Saikai hōgeigyō ni okeru geiniku ryūtsū," 54. He notes that they had regular trips to Shimonoseki, Hakata and Karatsu which took 2-3 days, and also to Togitsu and Sonogi near Nagasaki which took 5-9 days.

out was based at least partly on the local market value compared to what the *konaya* could get if they sold it further away. Koga's analysis of the shipping records for the Tsujikawa *konaya* on Iki island in the 1850s shows that red meat's value in particular declined over the course of the whaling season, as the whales thinned and thus had less fatty meat. As its value went down, the meat was more likely to be shipped out to be sold rather than sold locally.⁴¹ The market for whale meat also varied by whaling season. A total of 22 tons of whale meat was sold on the beach in the 1857-8 season, but in 1855-6 over 70% of the whale products sold by the same group were shipped out as oil and preserved meat. The decision of where and how to sell the whale meat also seems to have been influenced by the species and numbers of whales caught in a season, and the whaling grounds from which they were taken.⁴²

Consuming Whales Indirectly: Whale Parts in Agriculture

Whales were capable of supplying food twice over: directly, as meat, but also indirectly, by promoting successful crop production. The same is true of fish such as herring, which could be eaten or used as fertilizer, but whales are a special case. For one thing, because of their sheer size, a single whale could produce meat and other agriculturally-relevant products like oil and bonemeal in large quantities. Fish considered effective as a fertilizer were often ones which were poorer quality foods: cheap fish that tended to become fertilizer were inexpensive because of a lack of other demand for them. As noted at the end of Chapter 1, the rising population in the first half of the Tokugawa period put pressure on the available resource base for agricultural production. Thus, new methods and resources to prevent crop failures and their associated famines became increasingly important. Maximization of the agricultural system involved

⁴¹ Ibid., 61.

⁴² Ibid.

bringing in energy from outside the immediate agricultural area. Given the expansion of rice production into marginal areas in Tōhoku and elsewhere, this meant looking beyond terrestrial options and exploiting marine resources. In fact, Conrad Totman argues that the new specialized fisheries of the period developed as sources of both new foods and new fertilizers.⁴³

There were many options for fertilizer sources, from human and animal waste to animal and fish parts. Whale parts are just one representative of the possibilities of nutrient inputs from marine sources.⁴⁴ The wide variety and importance of fertilizers can be seen in an 1840 agricultural treatise by Satō Nobuhiro (佐藤信淵) about cultivation entitled *Baiyō hiroku* (培養秘録; Secret Notes on Cultivation). By the nineteenth century, fertilizers were not just necessary to prevent crop failure and famine in marginal areas: they were essential for the economy. Nobuhiro was employed by the shogunal government, and is best known for his promotion of theories of political economy and Westernization. He was especially concerned with economic growth and with building up military power to defend against the increasing pressure from Western ships trying to open trade with Japan in the mid-nineteenth century. His focus on the development and optimal use of natural resources to strengthen Japan came in part from family experience in agriculture, horticulture, forestry and mining.⁴⁵ In *Baiyō hiroku*, he discussed the effectiveness of human waste (extensively used in farming in Japan), the waste of domestic animals, and also the use of animal products such as fish or oils and fats. He presented dried sardines and sardine oil as the best marine fertilizer for rice, followed by whale oil, then other dried fish and oils.⁴⁶ Whale bones, because of their oiliness, were also a necessary additive to

43 Conrad D. Totman, *Early Modern Japan*, (Berkeley: University of California Press, 1995), 273-4.

44 For another influential marine fertilizer example, see the herring fishery described in David L. Howell, *Capitalism from Within: Economy, Society and the State in a Japanese Fishery* (Berkeley: University of California Press, 1995).

45 William Theodore de Bary et al., *Sources of Japanese Tradition*, 2nd ed., vol. 2 (New York: Columbia University Press, 2005), 601-2.

46 Satō Nobuhiro, *Baiyō hiroku*, in *Nihon nōsho zenshū*, ed. Yamada Tatsuo et al. (Tokyo: Nōsangyoson Bunka Kyōkai, 1977 (1840)).

fields to promote bountiful cash crops such as sugarcane, indigo, tobacco, hemp, and ramie. While other ground-up bones such as horse or cow were usable, Nobuhiro said that whale bones were best for this kind of nutrient renewal.⁴⁷ Thus, the inclusion of whales and other marine species in the overall environment was an important factor in the production of the staple crop of rice, but also in the diversification of agriculture into cash crops as the period went on. The expansion of agriculture and market-based farming relied on these new nutrient sources. The environmental limits of farming were thus defined not just by the availability of enough arable land, but also by the availability of the coastal marine environment from which fish and whales were taken to increase the production of that land. As a demonstration of the distribution range of marine resources like whales, the collection of farming manuals reproduced in *Nihon nōsho zenshū* (日本農書全集) includes references to whale fertilizer not just for three locations in the whaling areas of Kyushu, but also on two locations on the Noto peninsula in modern Ishikawa Prefecture. Whale-based fertilizers were even used in two places which most likely had it shipped by way of Edo: in modern Yamanashi Prefecture just west of Tokyo, and in Fukushima Prefecture in the Tohoku region.⁴⁸

The usefulness of whale parts for diversification of agriculture is apparent beyond just fertilizer, particularly in the case of new cash crops which became more widespread during the early modern period. Whale parts were instrumental in the production of Japanese cotton, for example. Something referred to as whale tendons or sinew (*suji* 筋) could be simply boiled, softening them back up for eating in soup, but they were more likely to be turned into bowstrings. The cotton-beating bow, an instrument used in the processing of cotton, was

⁴⁷ Ibid.

⁴⁸ Sources describing fertilizer including whale-based instructions include ones from: Kaga-shi (Ishikawa Prefecture), another location on the Noto peninsula (Ishikawa Prefecture), Higo in Kumamoto Prefecture, Aichi Prefecture, Fukushima Prefecture, Yamanashi Prefecture, one which is not specified more closely than Kyushu, and another not localized but with an author from Fukuoka. Yamada et al., *Nihon nōsho zenshū*, 72 vols. (Tokyo: Nōsan-gyoson bunka kyōkai, 1977-2001).

developed for use in Japan at the end of the eighteenth century in Nagasaki based on Chinese models. Instead of the more common cow-gut strings used in China, these bows used whale-gut strings.⁴⁹ While the term used for the animal part that could be turned into any kind of string - for shamisen, bows, or even in the more modern era in tennis racket strings - is most commonly "gut" in English, it did not always come from a whale's gut or digestive organs. The term used for this part in Japanese is *suji*, which can refer to tendon, sinew or muscle, but this is also not the best description of the anatomical source. This type of gut or *suji* came most commonly from processing thin strips of skin or intestines, and possibly also tendons, soaked in water and scraped clean before hanging them to dry.⁵⁰

While cotton grew best in Kyushu, the materials for the bows used to process the crop were available from whaling groups outside this area. The production of whale tendon or gut outside of Kyushu was considered lower-quality, however. According to an 1809 comparison of gut from Tosa and Kyushu done by Okumiya Nizaemon (奥宮仁左衛門), the lesser quality of the Tosa gut came from the fact that Tosa workers were less careful about preservation, where they took the strips out of warm water and put them directly into the sun, instead of putting them in the shade for half a day first as they did in Kyushu.⁵¹ Perhaps the better quality of whale gut produced in Kyushu was related to high demand for quality products necessary in processing the cotton grown extensively there. But it is also possible that better processing of whale gut came from Kyushu farmers' close contact with information about Chinese methods of string production through their foreign trade ports like Hirado, Nagasaki and Hakata. In this case, the overlap between cash crop development and high numbers of whaling groups in the same area may have facilitated the success of cotton as a cash crop in Kyushu. While farmers could grow

49 Nakajima Hisae, *Mono ni naru dōbutsu no karada: Hone, chi, suji, zōki no riyōshi* (Tokyo: Hihyōsha, 2005), 72.

50 Ibid., 70-1.

51 As cited in Ibid., 71.

cotton without whale products, their reliance on whale-gut strings to process their crop meant that the overall success of this cash crop was reliant in part on access to whale products.

Fertilizers and the cotton-beating bows are examples of whale products in types of agriculture which did not depend on whales in particular. There were plenty of other fertilizers used in Japan, and whale-based fertilizers are thus just one example of new marine sources of nutrients. There also were other at least potential sources of gut strings for cotton processing, since in China these implements were based on cow parts. However, the next section will turn to the one whale product which truly was the most effective option in its particular agricultural role: whale oil insecticide.

Preventing Nonhuman Consumption of Crops: Whale Oil Insecticide

Since humans began cultivating particular plants for their own use, they have had to fight off other organisms also trying to consume them. Insect pests have long been one of the most prominent agricultural enemies, and insecticidal substances were developed long before the advent of modern chemical pesticides. For example, American farmers began using pyrethrum (derived from chrysanthemum flowers) as an insect repellant in the late eighteenth century.⁵² In Japan, one of the first recorded insecticidal treatments developed for agriculture seems to have been whale oil.⁵³ This treatment involved scattering oil over the surface of the rice paddies and knocking insects off rice stalks into the oily water to suffocate and drown. While any oil could

52 James E. McWilliams, *American Pests: The Losing War on Insects from Colonial Times to Ddt* (New York: Columbia University Press, 2008), 47. provides a good chronicle of the war between humans and insects in American agriculture. Although chrysanthemums were also quite popular in China and Japan, pyrethrum was developed from Caucasian chrysanthemums and was not used in Japan until the late 19th century. Hiroki Ota, "Historical Development of Pesticides in Japan," in *Survey Reports on the Systemization of Technologies* (Center of the History of Japanese Industrial Technology, National Museum of Nature and Science, 2013), 25.

53 Ota, "Historical Development of Pesticides in Japan," 19-20 notes that the first record in Japan of pesticide treatments (a combination of plant derivatives and minerals) was written in 1600: Matsuda Naiki's *Kaden satchū san* (*Family Traditions on the Killing of Insects*). The use of whale oil was the next major development.

potentially coat the carapace of insects and block their ability to breathe, whale oil seems to have been more effective and faster-acting than plant-based oils that were developed later. Modern scientists studying the spread of polychlorinated biphenyls (PCBs, a category of manmade halogenated compounds) and their decomposition products tested the chemical composition of whale oil. They looked at a sample of whale oil held in the New Bedford Whaling Museum that had been produced before the manufacture of PCBs, and found in it complex halogenated compounds which bore a close resemblance to the artificially-made pesticide DDT.⁵⁴ While the study did not then test this chemical's effectiveness as an insecticide, it does show that reports from early modern Japanese farmers that whale oil worked faster and more effectively than rapeseed oil could have some basis in the chemical composition of the oil.

Whale oil was particularly effective in killing *unka* (浮塵子; ricehoppers or planthoppers), which destroyed 90% of the rice crop in central and western Japan in 1732, triggering the disastrous Kyōhō famine. Some agricultural improvements of the period harkened back to Chinese sources, and oil extracted by boiling from either whales or seals appears to have also been used as lamp oil in China as far back as a few hundred years BCE. However, there are very few references to pesticides developed from oil in Chinese agriculture.⁵⁵ Whale oil was most likely developed as a pesticide independently in Japan, and indeed, invented more than once. In his timeline of Japanese pesticide development, Matsubara Hiromichi (松原弘道) lists three or four separate occasions where this method was discovered, from a secret family recipe

54 Julie Rehmeyer, "A Whale's Tale," *Science News* 170, no. 18 (2006).

55 There is very little reference to marine oil in Needham's extensive work on the history of science in China. Joseph Needham, "Mathematics and the Sciences of the Heavens and the Earth," in *Science and Civilization in China* (Cambridge: Cambridge University Press, 1954-), 657 contains a reference to oil which had been extracted in large kettles from "dragon blubber". In the 16th century a treatise by Ma I-Long called *Nung shuo* describes a treatment for planthoppers using tung oil sprinkled on rice; "Biology and Biological Technology: Agriculture," in *Science and Civilisation in China* (Cambridge: Cambridge University Press, 1954-), 506. If they read this reference, it might have inspired farmers in Kyushu to try the same thing with the oil they had most available to them, which was whale oil, but there is no evidence one way or the other to indicate how much influence this work may have had on the practice.

for insecticide (which does not specify the ingredients) in 1641, to the sprinkling of whale oil on rice paddies by unrelated individuals in different counties in the Hizen domain in 1670, 1720 and 1732.⁵⁶ According to the neighboring Fukuoka domainal records, in 1670 a farmer named Kuratomi Kichiemon (蔵富吉右衛門) discovered that whale oil spread on his fields was an effective protection from insects. A local shrine's priest passed this information along to county officials during the Kyōho famine so it could be used more widely. Another explanation traces the method back to 1720, when a farmer named Ōmaru Hikoshirō (王丸彦四郎) of Kasuya county began using whale oil on his rice crop.⁵⁷

The most well-known (re)discovery of whale oil's effectiveness is the origin story provided by Ōkura Nagatsune (大蔵永常), one of the most famous and prolific agricultural authors of the Tokugawa period. He published this description in a treatise entitled *Jokōroku* (除蝗録) in 1826. It says that a certain Mr. Yahiro (八尋氏) in Mikasa county, Chikuzen, saw planthoppers falling into the oil of shrine lamps he was filling one evening, while he was praying for protection from insects during the massive infestation of 1732. Yahiro observed the whale oil's ability to kill insects attracted to the light, and saw this as the answer to his prayers. Because whale oil lamps were relatively common, he was certainly not the first person to recognize this effect, but Yahiro did take another important step. He tested the effectiveness of whale oil sprinkled on the water on one of his fields. Furthermore, he wrote down his results, allowing Nagatsune to recount the story nearly a hundred years later.

⁵⁶ Matsubara Hiromichi, *Nihon nōgakushi nenpyō* (Tokyo: Gakkai Shuppan, 1984), 23.

⁵⁷ Fukuoka domain's "Gaichū kujo hakkensha chō [Investigation of harmful insect extermination discovers]," as cited in Nakazono and Yasunaga, *Kujiratori emonogatari*, 147. These incidents are also listed with less detail in Matsubara, *Nihon nōgakushi nenpyō*, 23.

Nagatsune's desire to promote wider use of whale oil in agriculture is explained in an anecdote he provides about one of his trips during an insect outbreak in 1825. In *Jokōroku*, he describes meeting a farmer named San'emon (三右衛門) who explained that he

saw the withering of the [rice] stalks and noticed quickly that insects came forth afterwards, so [he] divided the fields into three and within those, into the field that had many insects he put a lot of rapeseed oil five times, in the field that had fewer insects he put in half the oil three times, and in the field with the fewest insects he tried putting in not even a little. The first field produced seven or eight parts [fractions of 10=full crop?], four parts for the next, and the last were totally withered, and just as this person told me, I also went to see and it was just as he said. Ah! If at that time he had provided whale oil, I sighed sadly thinking there might not have been insects at all.⁵⁸

Whale oil's effectiveness as a pesticide was at first known mostly in Kyushu, where the most whales were caught. By the start of the Tenmei famine in 1786, wholesalers and whaling groups provided nearly 1700 barrels of whale oil for use in combating insect damage all over the country.⁵⁹ At least some of the domains in Kyushu began collecting emergency stores of whale oil in the 1760s, and by 1820 every county in Kuroda domain was supposed to have 1500 barrels of emergency whale oil on hand.⁶⁰ Also, while Nagatsune's publication was probably the most widely read description of the effectiveness of whale oil, other authors did mention it. These were most likely to be texts on whales and whaling, such as Yamase Harumasa's *Geishi* (山瀬春政, 鯨志) in 1760, rather than texts on agriculture.⁶¹ Once the Tokugawa shogunate heard of this method, they sent out orders in 1787 and again in 1796 for all domains to use whale oil when insect damage appeared in rice paddies, thus spreading the word and usage of whale oil on fields.⁶² It is probably not a coincidence that the height of success for the Masutomi whaling

58 Ōkura Nagatsune, *Jokōroku*, in *Nihon nōsho zenshū*, ed. Yamada Tatsuo et al. (Tokyo: Nōsangyoson Bunka Kyōkai, 1977 (1826)), 15.

59 Nakazono and Yasunaga, *Kujiratori emonogatari*, 148.

60 Ibid.

61 Yamase Harumasa, *Geishi*, (originally published in 1760), in Kanō Kōkichi and Hiroto Saigusa, *Sangyō gijutsu hen. Nōgyō, seizōgyō, gyogyō.*, vol. 11, *Nihon kagaku koten zensho* (Tokyo: Asahi Shinbunsha, 1944).

62 Matsubara, *Nihon nōgakushi nenpyō*, 23-4. Although he notes that petroleum was first used against planthoppers in 1869, whale oil's effectiveness was still being considered in 1872 in Aichi prefecture.

group (one of the largest operations in Japan) came during the same period that the knowledge of whale oil's effectiveness as a pesticide was spreading throughout Japan in the early nineteenth century.

While Nagatsune did not know why in particular whale oil was a more effective insecticide than plant-based oils, he did note that pure whale oil was best and that farmers should try to use it when they could. Apart from possible difficulties in supply for areas far from whaling groups, whale oil was far more expensive than the plant-based oils such as rapeseed oil or tung oil. These plant-based oils were less effective as insecticides, but did have some benefit.⁶³ Nagatsune admitted whale oil could be difficult to distinguish from fish oil derived from an assortment of sources, but a successful treatment of pure whale oil required a fraction of the amount. He cautioned readers: "If you do not know how to separate out the types, then no matter how much effort you put in, you will not get the result you are looking for."⁶⁴ Generic fish oil's main components were sardine, shark and tuna oil, and it was also an unrefined oil. Possibly in the interests of showing the source of proper whale oil instead of this mixed fish oil, or possibly simply because he thought farmers would be curious about whales, Nagatsune included six pages of diagrams of whales and dolphins in *Jokōroku*. These diagrams included some minor labels of external anatomical features such as the various fins, teeth or baleen, and even labels for the milk-producing nipples (Figure 2.4).⁶⁵ It was certainly not necessary to know these details about different whale species in order to buy their oil and spread it on one's rice field. The importance of such natural history details will be discussed in Chapter 3.

63 Nagatsune notes that farmers using rapeseed oil instead of whale oil should use twice as much to get the same effect. Ōkura Nagatsune, *Jokōroku*, 47.

64 Ibid., 31.

65 Ibid., 33-5.

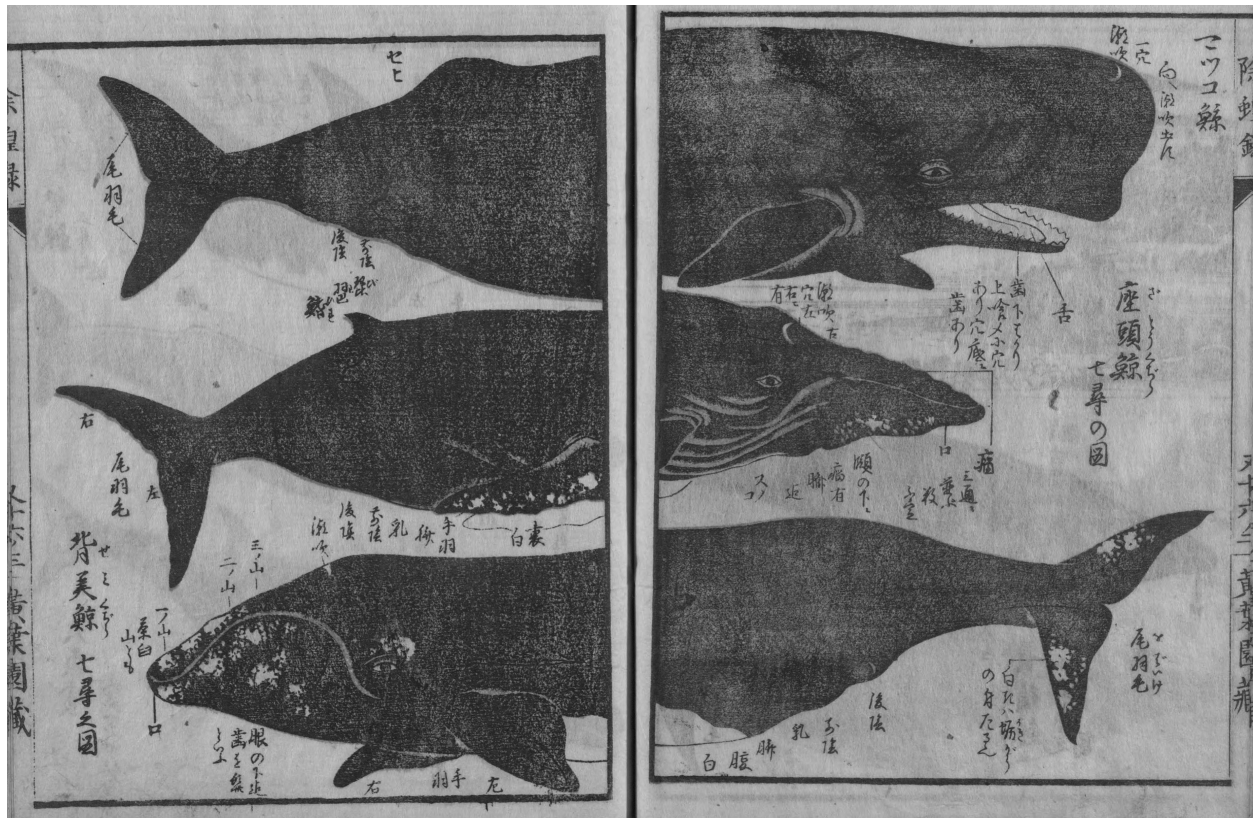


Figure 2.4: Image of sperm whale, humpback whale, and right whale from Ōkura Nagatsune, *Jokōroku*, 1826. Courtesy of the National Diet Library. Page 24 of the digital edition, <http://dl.ndl.go.jp/info:ndljp/pid/2536205>

The remarkable effectiveness of whale oil insecticide created an extensive market for oil throughout the agricultural areas of Japan. Rice production was fundamental to Japanese society in the Tokugawa period not just as a staple food, but also as the basis of the financial system. Therefore, pest control in rice fields was a prime concern for farmers trying to maximize their harvest. Whale oil, good for at least a year before it started souring, was able to travel throughout the country in support of this essential aspect of life in Japan, even though entire whales would never make it that far. But even so, whale oil was not the longest-lived or most transportable product derived from whales.

Consumption of More Durable Whale Parts: Baleen Products

The substance known as whalebone or baleen was one of the least perishable parts of a whale. It grows from the jaws of Mysticete whales in place of teeth, making long, flexible panels set closely together. Baleen whales will take in a large mouthful of the ocean and press out the water through their baleen with their tongues, crushing the krill or other small organisms in the water column against the baleen and then scraping their meal down their throats. Baleen is composed mostly of keratin, an animal protein which is also found in horn, hooves, claws, fingernails and hair. The type of keratin in baleen is a hard keratin which, like horn, can be softened and reshaped in hot water.⁶⁶ The vertical grain of baleen also makes it possible to cut into strips of any width. These properties, along with its strength and lightness, are what made it useful for constructing many different objects. Although baleen was used in a variety of other ways, such as for umbrella spines or riding whips, the strongest cultural impact of the substance known as whalebone in Europe and America was definitely in the fashion industry.⁶⁷ Unlike other possible substances for stiffening corsets, "as the whalebone absorbed the heat of the body, the stays would have taken on the shape of the body," making for a more comfortable support that was not completely softened by the heat.⁶⁸ For Western whalers, it is unclear whether the demands of fashion drove the search for baleen, or whether the availability of baleen gathered as a byproduct of whaling for oil drove the fashion industry. In either case, baleen was essential to the shaped clothing of men and especially women from the sixteenth through nineteenth centuries in Europe and America. But what did the availability of this substance do to shape the culture of Japan?

66 Julie A Lauffenburger, "Baleen in Museum Collections: Its Sources, Uses, and Identification," *The American Institute for Conservation of Historic & Artistic Works* 32, no. 3 (1993): 214-6.

67 See the "Interlude: A Short Digression on Fashion" section of Ellis, *Men and Whales*, 131-40.

68 Sorge-English, *Stays and Body Image in London: The Staymaking Trade, 1680-1810*, 60.

A wide variety of small products incorporated the highly flexible baleen. In Japan, thin strips of baleen were one of the substances that could be used in wrapping sword hilts, and were also used to make fishing cord, including the cord wrapped around tame cormorants' necks to keep them from swallowing the fish they caught.⁶⁹ Larger pieces could be made into tea trays or folding headrests.⁷⁰ Sometimes, baleen had a decorative function, stiffening the shoulder pieces of the samurai *kataginu* vests or as decoration on helmets or armor.⁷¹ It even became the substance used for rulers in the clothing industry, such that a measure known as *kujirajaku* (鯨尺) became the standard, long version of a *shaku* used in the Kanto and Kansai areas in comparison to the smaller, carpenter's measure *kanejaku* (曲尺). Since the longer clothing measure existed before the name included a reference to whales, only changing sometime in the middle of the Edo period, it is likely that the name change reflects a greater availability of baleen as the standard material for making these rulers.⁷² While these are interesting uses, there were alternative substances available for most of them. For example, in her analysis of one collection of 152 Japanese swords in the Walters Art Gallery, Baltimore, Maryland, museum conservator Janet Lauffenburger found that at least 22 of the hilts were wrapped in baleen, and a smaller collection of 35 swords in the George Walter Vincent Smith Art Museum in Springfield, Massachusetts had ten hilts wrapped in baleen.⁷³ Since this is a very small sample of the total

69 For a discussion of baleen in sword grips, see Lauffenburger, "Baleen in Museum Collections." Cormorants are referenced in Akimichi Tomoya, *Kujira wa dare no mono ka*, Chikuma Shinsho 760 (Tokyo: Chikuma Shobō, 2009), 53-5.

70 A foldable headrest is shown in the collection of cultural objects in Fukuoka-shi hakubutsukan, "Fukuoka-shi Hakubutsukan tokubetsu kikakuten: Nihon to kujira," ed. Fukuoka-shi Hakubutsukan (Fukuoka: Shunhōsha shashin insatsu KK, 2011), 128.

71 Lauffenburger, "Baleen in Museum Collections," 220; a photograph of a helmet with baleen decorations can be seen in Fukuoka-shi Hakubutsukan, "Nihon to Kujira," 128.

72 The earliest example of the use of *kujirajaku* provided by Nihon daijiten kankōkai dainihan henshū iinkai and Shōgakkai kokugo jiten henshūbu, *Nihon kokugo daijiten*, 2nd ed. (Tokyo: Shōgakkai, 2000-2002) is in 1806. For an explanation of the historical development of the term, see the *kujirajaku* entry in Kokushi daijiten henshū iinkai, *Kokushi daijiten*, (Tokyo: Yoshikawa Kōbunkan, 1979-1997). Both references were accessed through the Japanknowledge+ database, <http://www.jkn21.com/top/corpdisplay> on February 28, 2014.

73 Lauffenburger, "Baleen in Museum Collections," 222-3.

number of swords in early modern Japan, it appears likely that a significant number of sword hilts did make use of baleen wrappings, but clearly other materials were also commonly employed.

There are two major products whose construction actually required baleen: *bunraku* puppets and *karakuri* dolls. For these objects, whale baleen was not just preferred but was in fact the only substance used to make springs inside the mechanisms that made both puppets and clockwork dolls move. Without baleen, puppet heads would not have developed moveable features, and *karakuri* dolls would not have been possible at all. In puppet heads, a curved baleen strip was used as a spring, with one end glued to the inside of the head. For the moveable eyes and mouth, strings attached to the back of the parts were wrapped and threaded through the unfixed end of the baleen spring, then tied down on a lever on the handle for the head. When the puppeteer pulled one of these levers, the spring would bend as the string moved the mouth or eyes. When he released the lever, the released tension in the spring would pull the mouth or eyes back to the resting position. Some *bunraku* puppets used today are still repaired with baleen, an indication that the properties of this substance are considered essential to the effect of manipulating the puppet's eyes and mouth.⁷⁴ Before the development of these baleen springs, puppet heads were solid wood. For at least six major types of clockwork *karakuri* dolls, the spring was a tightly-coiled strip of baleen which functioned the same as the spring-steel coils used in Western clockwork. The release of tension keeping the flexible material coiled drove the movement of the clockwork parts.⁷⁵ In much the same way that baleen was the preferred substance to use in corsetry and other stiffened Western clothing, even when other options

74 Barbara C. Adachi, *Backstage at Bunraku: A Behind-the-Scenes Look at Japan's Traditional Puppet Theatre* (New York: Weatherhill, 1985).

75 Tatsukawa Shōji, *Karakuri*, vol. 3, *Mono to ningen no bunkashi* (Tokyo: Hōsei Daigaku Shuppankyoku, 1969).

existed, baleen springs in Japan were preferred over any other substance like bamboo which might have shared some of the necessary springiness.

The use of baleen in these moving figures, whether puppets or clockwork dolls, is interesting because this is the only example in Japan equivalent to the impact of baleen in Western fashion, where availability of the material shaped the possibilities of cultural production. Interestingly, the fact that such figures required baleen springs was not necessarily apparent to audiences. Thus, whale products such as these were capable of travelling long distances and shaping society even when most people were unaware of their maritime connections. Because the skills to construct many objects were passed along in secrecy from master to apprentice, there is often very little information about how exactly things were made in the Edo period. This is likely to be especially true for things like *karakuri* dolls. Part of the fun of watching these dolls move in lifelike ways was the fact that their mechanisms were hidden, so they moved as if by magic. However, we are fortunate in having an explanation in plain language describing the workings of many types of *karakuri*, published by Tosa native Hosokawa Hanzō Yorinao (細川半蔵頼直) in 1796. This work is likely the closest we can get to understanding what people at the time thought of the role of baleen in making springs for *karakuri* and *bunraku* dolls.

In his prologue, Yorinao focuses on what can be learned from making something lifelike. He was less interested in how entertaining such dolls could be, than in the science of constructing them and what that process could teach someone about the living things they replicated. So it is important to note that, while they were popular entertainments, *karakuri* dolls were not always seen purely as toys. He gives detailed descriptions of the different types of dolls available, including references to where baleen was used. Baleen was particularly common for mainsprings driving the motion of the clockwork inside the doll, but it was also sometimes used

for other moving parts. For example, in a tea-serving doll that moves forward, offers a tea cup on a tray to someone, and turns and reverses direction once the cup is returned to the tray, there is also a spring attached to the needle that causes the doll to stop and reverse direction.⁷⁶ His descriptions of parts are sometimes quite extensive, including for example how much pressure the spring should exert in making the tea-serving doll.⁷⁷ It is possible that someone could build a doll of their own based on his instructions. Some instructions are less detailed than this, as with the clockwork fish that leaps up a waterfall based on the movement of a mainspring whose materials are not mentioned.⁷⁸ However, it is likely that all of the mainsprings Yorinao mentions are baleen: in a survey of *karakuri* dolls still extant in 1969, Tatsukawa Shōji (立川昭二) found that nearly all of the dolls had baleen springs⁷⁹. Even in one case that was missing its mainspring, the doll still had baleen parts attached to the shoulders.⁸⁰

Yorinao's text points out where parts ought to be baleen and how they connect to other moving parts. Unfortunately, he never discusses why baleen should be used instead of some other flexible material. Furthermore, no matter how popular such clockwork dolls became, the pieces of baleen involved are quite small and would not use up much of the vast amount of baleen provided by catching just a handful of whales, never mind the total brought in by the entire early modern whaling enterprise. There would not be any *karakuri* dolls without baleen from whaling, unless their lack pushed clockwork makers to start producing spring steel instead. The lightweight baleen springs used in clockwork seem to have been preferred even in Nagasaki, where Dutch-influenced clockmakers worked. In fact, metal springs do not appear to have existed in Japan before the 1850s.⁸¹ Unlike the nearly-ubiquitous presence of whalebone stays in

76 Yorinao volume 1, page 3-4; in Tatsukawa, *Karakuri*, 301.

77 Yorinao p. 7 in *Ibid.*, 309.

78 Yorinao volume 2, p 5, *Ibid.*, 339.

79 *Ibid.*, 257.

80 *Ibid.*, 66.

81 *Ibid.*, 247.

Western clothing, it is unlikely that the demand for baleen springs drove the whaling groups during this period. Rather, the use of baleen in these popular entertainment and learning products was incidental to the focus of whaling group production. Just because they made use of a secondary product of the industry, however, does not mean they were not important. For one thing, baleen in these clockwork mechanisms and puppets, as well as in all the other assorted uses like sword hilts and costumes, shows how marine products could spread far beyond the coast and become intertwined with the entertainments of the populace in cities and the countryside.

Who Prospered? The Economic Influence of Whale Products

With all of these products being sold for such a variety of different purposes, what can be said about the overall influence of whale products during the Edo period? What was the true extent of influence that is referred to by the metaphorical "seven villages" of the proverb at the start of this chapter? One way to answer this question is to consider the monetary benefits that were linked to the sale of whale parts. Unfortunately, there is not a good way to determine the overall economic influence of the whaling industry, because the whaling groups were not all linked together and many of their records have been lost. However, looking at some of the individual groups can show the general magnitude of the possible sums involved, and some of the different management solutions that appeared in different whaling areas, particularly in the nineteenth century, as this is when most of the available records are from. On the one hand, during this century the necessary merchant networks for buying and selling whale parts were well-developed after decades of organized whaling, producing the many different products that needed to be sold. On the other hand, as noted in the previous chapter, whaling groups began to

have more trouble catching declining whale populations after the middle of the nineteenth century, so some of the whaling group records and financial difficulties they show are not necessarily representative of the whole period. However, given the tendency of whaling groups to operate on a boom and bust cycle, where a given group might only exist for a few years before going out of business, the nineteenth century was not necessarily dramatically different from the late seventeenth century when whaling groups had to shift to net whaling and new species in order to keep going.

One of the most detailed looks at whaling group finances comes from Koga Yasushi's analysis of the Tsujikawa (辻川) family's management on Iki island.⁸² This whaling group came under the broader management of the massive Masutomi group in the 1830s. At this point, the Masutomi group managed five different whaling groups in the Saikai area, ones with net-placement sites in Iki, the Gotō Islands, Ikitsukishima and Ōmura. The funding for whaling in this area was complex, in part because the management was split between the whaling group proper (the people who went out on the water to catch whales) and the processors on shore. As noted earlier in this chapter, the whaling group was also known as the *ōnaya* or large sheds, in contrast to the *konaya* or small sheds, referring to the buildings in which the whale parts were broken down into oil and bone meal and so on. The Tsujikawa family were members of the *konaya* management, but they were also sake distillers and mid-size cargo shippers. In other words, the whaling group or *ōnaya* were the professional whalers, but part of the processing of the whales was farmed out to a group of merchants in the *konaya* association who had the capital to buy shares of the whales that the whalers would catch. This divided management system arose because whaling required startup capital before profits could be accrued. Founding a whaling

82 Koga, "Saikai hogeigyō ni okeru geiniku ryūtsū."

group could cost as much as 5000 ryō, and there were maintenance costs for the boats and nets every season that had to be paid even if the group did not need to purchase all new equipment.⁸³

Such large sums of money generally did not come all from one source. Revenue streams in the Masutomi group flowed between: the domain and the whaling group (*ōnaya*); the whaling group and wholesalers in Osaka, Shimonoseki, and other areas; the whaling group and the merchant association that made up the *konaya*; and between the various merchants in the *konaya* association. The whaling group had to pay a fee or tax to the domain in order to secure the fishing rights for the areas in which they went whaling. They also had to pay transport taxes on the products that they sold. In some cases, money could flow in the other direction: sometimes whaling groups could get a loan from their domain, if the management could not fund the group normally (in times of crisis, for example). The wholesalers would pay an advance to the whaling group based on the whale products that would be acquired during the upcoming season. The *konaya* also essentially bought shares in the parts of whales that were going to be caught in the upcoming season. In some cases, this meant providing up to half of the whaling group's operating funds. The flow of funds within the *konaya* was determined by how much each merchant had paid upfront: their shares, contributed in the beginning of the season, determined the proportions of profit and loss that they would bear at the end of the season. For the *konaya*, whaling was an investment opportunity rather than their main business.⁸⁴

Tsujikawa account books for a whaling season show that there was a one-sided payment made from the *konaya* to the whaling group that they never recovered. This payment was the cost of being able to buy into potential profits. But apart from this *fugin* (附銀), which at least in the

83 As cited in Ibid., p 88. For comparison, Susan B. Hanley, "A High Standard of Living in Nineteenth-Century Japan: Fact or Fantasy?," *The Journal of Economic History* 43, no. 1 (1983). estimates an average farmer's yield from one year's cash crop to be approximately 12 ryō, and an average carpenter's yearly wage to be approximately 26.5 ryō.

84 Koga, "Saikai hogeigyō ni okeru geiniku ryūtsū.", 89.

1855-6 season was about 20% of the total funds provided by the *konaya*, they paid for shares of a given total catch. If there was a lower total catch for that season, then the remainder of their prepayment was carried over into the next season. In the 1855-6 season, the Tsujikawa paid a total of 28,275 monme (slightly over 414 ryō) in four installments before the season started, based on an estimated catch of 20 right whales. The number of whales actually caught was only 15. The calculations of shares of whale parts also included a weighting for different species, where right whales counted as one whale, but a humpback whale was counted as only 0.7 of a whale. Therefore, the 1855-6 season's catch was only 10.38 right whales' worth of catch. Since the whaling group had to carry over the rest of the prepayment for the 9.62 whales they failed to catch, they operated at a loss that year of 2,405 monme, despite the relatively good season of fifteen whales with sales totalling 41,439 monme. In the following season, after catching only six whales, they lost over 19,000 monme (after expenses much higher than the total sales of 16,048 monme). The profit that they finally brought in in 1857-8 of 10,347 monme off of a catch of nineteen whales and total sales of 44,631 monme was thus still not enough to make up for the previous years' losses.⁸⁵

The Saikai area, with the densest concentration of whalers, may have been the place where the largest amount of capital was tied up in whaling efforts. However, the problem of matching funding to estimated catches that then fell through was not limited to the Saikai area. In Kumano as well, catches did not always meet financial expectations. Kasahara Masao's (笠原正夫) calculation of Koza whalers' net profit took into account a category of "assorted expenses" and one for trade commissions. Average expenses and trade commissions both appear to have increased slightly in the middle of the nineteenth century, whereas the number of whales caught did not. To calculate net profit values, both expenses and trade commissions were also subtracted

⁸⁵ Ibid., data from the table on p 91 and tables 5 and 6 on page 93.

from an income that must have included not just money from selling whale parts, but also loans or other sources of income for the whaling group. This explains how there were significant incomes of 92 and 233 kan in 1865 and 1866, respectively, even though in both years no whales were caught. Therefore, the ability of any whaling group to remain profitable was not influenced solely by the number of whales caught, and the economic records of these whaling groups are not a source of direct information about catches, although fortunately the same groups' records often contain numbers of whales caught as part of their bookkeeping.⁸⁶

The prices of different whale parts could also vary based on many different factors. These included not only perceived quality of the products, as with the difference between gut processed in Kyushu and that processed in Tosa, but also seasonal variations.⁸⁷ When whale products were provided to distant or local marketplaces, the price varied depending on what the merchants thought the market could bear, and how much of the product was available that season. For Masutomi whale oil shipped to markets outside of Kyushu, for example, prices were set based on a comparison to sardine oil or other competitors for whale oil, based on how much oil could be provided for the market in what timing. But they also had to consider their competitors, because if they set prices too much higher than other nearby whaling groups, no one would buy theirs.⁸⁸ As reliable supply diminished with declining catches in the mid-nineteenth century, prices rose. For example, the price for oil in the northern Kyushu domains of Higo and Chikuzen rose from around 100 monme per container before 1830 to 165 monme in 1843 after years of no or low catches. There were apparently long deliberations between the Masutomi group and their sellers

86 Kasahara Masao, *Kinsei gyoson no shiteki kenkyū : Kishū no gyoson wo sozai to shite* (Tokyo: Meicho Shuppan, 1993), 216-17.

87 Nakajima, *Mono ni naru dōbutsu no karada*, 70-2.

88 Fujimoto Takashi, "Geiyū no ryūtsū to chihō shiba no keisei [the Circulation of the Whaleoil and the Formation of the Local Market]," *Bulletin of the Institute of Research in Kyushu Cultural History*, no. 12 (1968): 126-8.

on whether they should set the price at 170 or 175 monme after this, so prices continued to rise later in the century.⁸⁹

The *konaya* in the Masutomi system were in some ways a lesser partner of the whaling group. As I noted in the discussion of whale meat, the Masutomi split the products from whales between the two management divisions so that the whaling group or *ōnaya* focused on the production of whale oil for the wholesalers and other distant markets. The *konaya* were buying into whale parts that were sold more locally. The whalers needed the *konaya*'s funds to start the season and enable them to produce the oil that they sold, and they acquired the financial support of these local merchants by promising them unwanted whale parts. In other areas, funding from partners outside of the whaling group itself often came mostly from the domain rather than from local merchants' associations. Thus, the sale of whale parts could be an important part of local merchant economies and investment opportunities, as well as providing products to distant markets in Shimonoseki and Osaka, or it could be an important part of domainal finances through taxes and repayment of loans from the whaling group.

The difficult balance between whaling group finances and domainal expectations appears in petitions between whaling villages and Kii domainal officials, especially during periods of whaling group crisis. These crises for Kumano and other whaling groups included not just poor catches, but also local crop failures and social unrest beginning in the Tenmei period (1781-1788). For example, one major complaint which appeared in an 1865 series of negotiations between Taiji whalers and higher authorities was that, due to the overall economic situation of the area, commodity prices were going up.⁹⁰ Even when whalers were not able to catch many

89 Ibid., 131-2. The units for pricing are mostly left out of the original source, but there is one part which mentions *to* (斗) a barrel of approximately 18 liters, so prices are probably set per *to*.

90 This series of letters is reprinted in Wakayama kenshi hensan iinkai, *Wakayama kenshi. Kinsei shiryō* (Wakayama-shi: Wakayama-ken, 1976), 726-32: vol 4 section 4, source 6: *Taiji kujirakata kako kengōryū*. While they give no evidence for the price increase, Kasahara's data supports their claim, indicating that expenses for the Koza whaling group more than doubled between 1824 and 1867. Kasahara, *Kinsei gyoson no shiteki kenkyū*.

whales, they still needed to buy new equipment to replace gear destroyed or worn out in whaling efforts, and such maintenance was becoming more expensive, along with everything else. Many whaling groups also relied on manpower from surrounding villages for processing their catch, which could become less available during times of unrest.

In good years, the profits of the Koza Whaling Office were sometimes a useful source of cash for paying assorted forms of taxes, as in 1805 when 1 kan 642 momme of silver were borrowed from them to pay taxes the village owed to the government.⁹¹ Unfortunately, it took an entire whaling season to regain this amount of money.⁹² Later in the century, the Koza Whaling Office suffered from severe deficits, possibly because of the need to use their funds for assorted forms of taxes, and due to the increasing rarity of whales from which to gain any profits. Because there was no other fishing to support the village in the winter, both the government and the villagers themselves made a serious effort to keep whaling operations going after bad years. For example, in 1823 the villagers and the domain together contrived to raise enough loans to revive whaling after the previous year's lack of success.⁹³ The economic difficulties of whaling groups were not limited to not having enough whales to sell. Above and beyond daily rice rations for workers who had to be fed during the whaling season (even when they weren't catching any whales), there was a strong welfare-style system set up to support those who had become too sick or old to work, or those who were family of dead whalers.⁹⁴ Therefore, it could be difficult for whaling groups to remain solvent. Large amounts of money may have been raised to support whaling in all the major whaling areas, which certainly was important for their local economies, but these large investments did not always provide much of a profitable return.

91 Monetary conversion depends on the highly variable market conditions for specific times and areas, but based on the official conversion standard of 1 ryō = 50 momme or approximately 187.5 grams of silver, with 1000 momme = 1 kan of silver, this amount of money is equivalent to approximately 32.8 ryō.

92 Wakayama kenshi hensan iinkai, *Wakayama kenshi. Kinsei*, vol. 4 (Wakayama-shi: Wakayama-ken, 1990), 714.

93 Yamashita Shōto, *Hogei I*, *Mono to ningen no bunkashi* 120 (Tokyo: Hōsei Daigaku Shuppankyoku, 2004), 250.

94 Hamanaka Eikichi, *Taiji chōshi* (Wakayama-ken Taiji-chō: Taijichō, 1979).

Conclusion: Using the Whole Whale?

Whale products influenced different levels of society. Some of the many possible interconnections between the marine environment and people in different areas of early modern Japan are reflected in the local, regional, and inter-regional trade in whale parts. Whale meat was an important food for regions near whaling groups, on a scale that included much of northern Kyushu as far as Shimonoseki in Honshu, or from the Kumano coast all the way to Osaka. The parts of the whale that spoiled more slowly than meat travelled farther, to distant farming regions. Baleen, one of the longest-lasting whale parts, circulated throughout Japan, wherever people looked for entertainment from clever clockwork mechanisms and puppet plays. While whale meat could always be replaced by some other animal meats, as is made clear by the consumption of "mountain whale" wild game, baleen springs had fewer substitution options. Of all possible parts, the whale product with arguably the most important impact on early modern Japan was the oil used in agriculture, even if whale oil pesticide, the most specialized and surprising use of whale oil, strangely gets very little focused attention in histories of Japan.

It is possible that the agricultural role of whale oil has not been emphasized in Japanese whaling histories because it invites too close a comparison between Japanese whaling and the industrial whaling of countries such as the United States and Great Britain. Americans and Europeans did not generally go whaling to acquire meat, but instead focused on the production of oil and whalebone (baleen). But as its use as an insecticide shows, whale oil was an important product for the Japanese as well, especially after the early 1730s, when it became integral to the success of rice crops in Kyushu and western Honshu. There is a widespread assumption that early modern Japan farming essentially had no farm animals, and thus the role of animals in Japanese farming is often overlooked. However, as Pieter de Ganan argues, domestic farm

animals were not useful merely as draft animals or as food sources. In early modern Japan, horses and oxen were most useful as producers of fertilizing manure.⁹⁵ Whales are only one of many examples that also help to counter the assumption of animal-free farming. A view of early-modern Japanese agriculture focused only on terrestrial resources is just as incomplete and misleading as the assumption that domestic animals were unimportant.

Following whale products into the Japanese landscape shows the innovative ways that people in the early modern period were able to adapt available resources to their needs. Expansion of the resource base into nearshore waters through specialized fisheries like whaling of course supplied basic subsistence needs by supplementing food production. But it also promoted the development of complex markets through cash crop improvement with new fertilizers and technologies like the cotton-beating bow. Finally, it shaped important cultural trends: the hidden workings of baleen springs captured public interest by facilitating the expressiveness of *bunraku* puppet theater, travelling clockwork doll shows and privately owned *karakuri*. While audiences for all of these did not need to know that whale parts were involved, the lack of baleen springs would have dramatically changed the effect of the shows or toys. At the very least, such mechanisms would have been far more expensive if they had to substitute the spring steel not developed in Japan until the late nineteenth century. As Martha Chaiklin comments on her analysis of material culture related to foreign imports (to which any kind of clockwork was related at least inspirationally), such clockwork entertainments "contributed to the quality of life. They expanded the boundaries of the universe and what could be accomplished in it."⁹⁶ The following chapters will investigate how whales crossed the boundaries of the less physical and material side of this universe. They will focus on the classification and

⁹⁵ de Ganon, "The Animal Economy," 83-108, chapter 5.

⁹⁶ Martha Chaiklin, *Cultural Commerce and Dutch Commercial Culture: The Influence of European Material Culture on Japan, 1700-1850* (Leiden: Research School CNWS, 2003), 114.

imagination of whales by scholars and the general public (Chapter 3) and on the place of whales in the spiritual realm (Chapter 4).

Chapter 3

Curious Creatures:

Seeing, Classifying, and Imagining Whales in Early Modern Japan

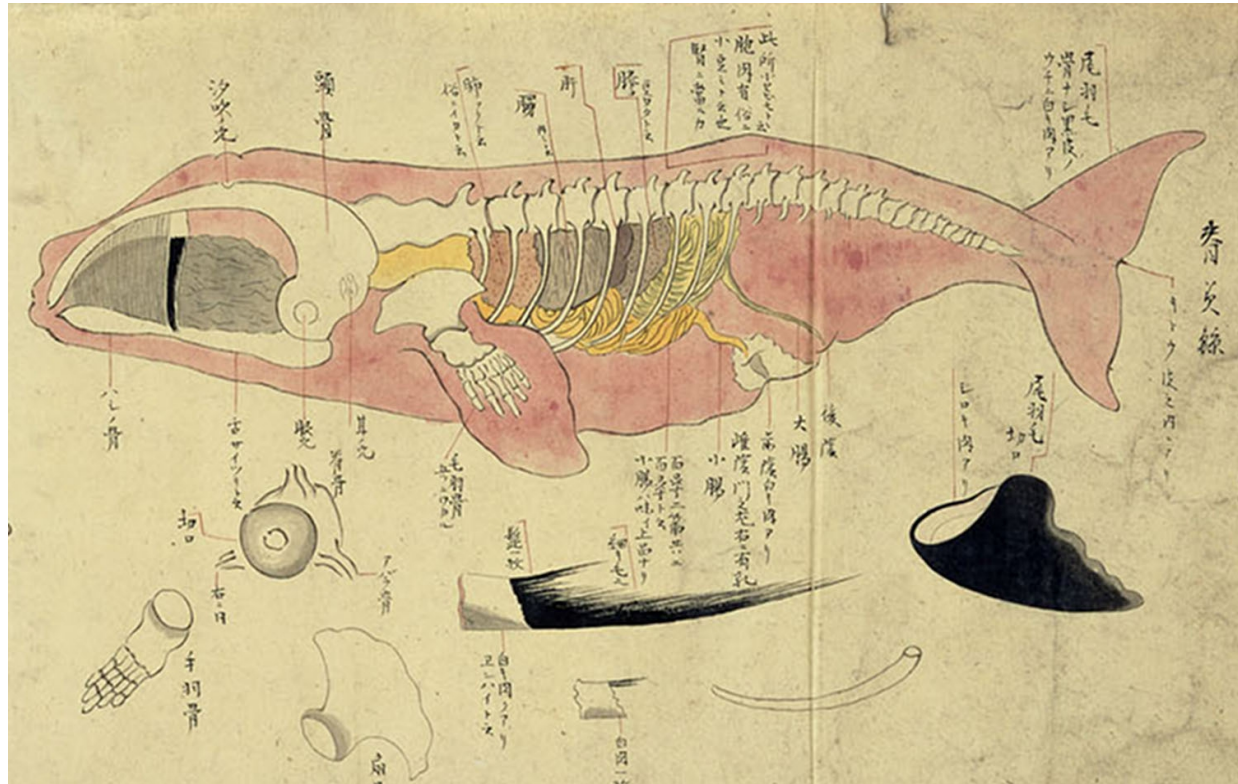


Figure 3.1: The internal anatomy and parts of a North Pacific right whale. Beiga, *Rokugei no zu* (1847), National Diet Library of Japan #7-731.

As strange and unusual creatures, whales have captured human imagination around the world for centuries. In Japan, there are some unique aspects to illustrations of whales which show them to be particularly fascinating, more so than other marine creatures. Perhaps one of the most peculiar and puzzling examples of this are the whale anatomical drawings which appeared in early modern Japan (Figure 3.1). In this 1847 scroll, *Rokugei no zu* (Diagrams of Six Whales) there is a fascinating cutaway view of a right whale showing the disposition of its internal organs. Apart from human anatomical drawings, illustrations like these are the only anatomical drawings of animals that remain from the Tokugawa period. This figure, the one anatomical

diagram on a scroll illustrating the various species of whales found in Japan, is perhaps the clearest extant example of whale anatomy from the period, but it is not the only instance of this type of illustration for whales.¹ How did whale anatomy drawings, and not drawings of any other nonhuman animals, develop in Japan? What type of knowledge were images like this trying to convey, and how did they fit into the contemporary depictions and imagination of whales?

As discussed in Chapter 2, whales were one of the maritime resources exploited in new ways during the Edo period, but they had a larger role than just being the focus of one of the new specialized fisheries. Period descriptions which allow us to describe the whaling practices discussed in Chapter 1 arose in part from curiosity about whales as strange and interesting creatures. This curiosity was expressed in many scrolls and manuscripts produced between the start of organized whaling and the end of the nineteenth century. Such texts described and illustrated not only the process of whaling, but also different aspects of the whales themselves. Even when they could not interact with whales or their parts physically, people could interact with them metaphysically in illustrations, descriptions, and stories. Through these imagined whales, the broader populace could live with the marine environment even if they never went near the ocean.

As a subject of intense curiosity, whales also were caught up in changing views of the natural world during this period. Of course, curiosity about the natural world did not suddenly appear in the Edo period. Various aspects of nature had long been an important subject of illustration in Japan, for example in the tradition of birds and flowers paintings that originated in China.² Still, the Tokugawa peace allowed for a great flourishing in many leisure arts. Novel concepts in books and art that came from Europe through limited but influential trade, first with

1 Beiga, *Rokugei no zu*, #7-731 (National Diet Library, Japan, 1847).

2 Imahashi Riko, *Edo no dōbutsuga : Kinsei bijutsu to bunka no kōkogaku (Archaeology of Animal Painting, Cultural Representation in the Edo Period)* (Tokyo: Tokyo Daigaku Shuppankai, 2004).

the Portuguese and then the Dutch, inspired new subject matters and also new ways of creating images and representing subjects.³ Science, particularly medicine, was an integral part of this change in visualization of the world. A new understanding of internal anatomy was one of the results of importation of Dutch medical texts, which helped shift the ways that the human body might be depicted. And, apparently, the ways that other bodies could be depicted as well. What is fascinating here is that other nonhuman, non-whale anatomical illustrations did not seem to be produced in early modern Japan, in contrast to the large numbers of animal species whose dissection and vivisection were illustrated in Europe and America. Because the development of medicine in early modern Europe relied both on human cadaver dissection and on animal vivisection, scholars produced a wide assortment of illustrations of the internal anatomy of humans and other animals. While not all anatomy texts illustrated multiple species, anatomist Samuel Collins, to give just one example, published a treatise in 1685 containing illustrations of the internal anatomy of not just humans but also cats, birds, fish and insects.⁴ However, whales were not one of the animals studied by Western anatomists, and in Japan, whale anatomical drawings do not appear in anatomy texts, but rather in scrolls about whale species. This makes the special case of anatomical whales even more puzzling. Why choose to focus on whales, and not one of the many other animals dissected in Europe and America? Just who was the audience for these sorts of whale diagrams?

3 For details on the influence of Western methods of representation on Japanese ones during this period, see Timon Screech, *The Western Scientific Gaze and Popular Imagery in Later Edo Japan: The Lens within the Heart* (New York: Cambridge University Press, 1996) and Maki Fukuoka, *The Premise of Fidelity : Science, Visuality, and Representing the Real in Nineteenth-Century Japan* (Stanford, California: Stanford University Press, 2012).

4 Samuel Collins, *A systeme of anatomy, treating of the body of man, beasts, birds, fish, insects, and plants illustrated with many schemes, consisting of variety of elegant figures, drawn from the life, and engraven in seventy four folio copper-plates. And after every part of man's body hath been anatomically described, its diseases, cases, and cures are concisely exhibited. The first volume containing the parts of the lowest apartments of the body of man and other animals, etc.* (In the Savoy [London]: Printed by Thomas Newcomb, 1685).

The answers to these questions reside in changes in natural history practices, medical knowledge, and the philosophy of relations between humans and nature in Edo Japan. Whales, and the varied understandings of them expressed in different types of illustrations and texts, are representative of not just the ways that the Japanese people interacted with marine life, but also of the ways that they connected with and conceptualized the other living things in their environment. In this chapter, I will focus first on the anatomical images, and the understanding of whales by scholars of natural history and medicine that can help explain such images. Then I will turn to other examples of how whales were imagined, both in illustrations and in stories, to show how these rather uniquely imagined whales were part of a larger understanding of both the marine world and the broader natural environment of early modern Japan.

Envisioning the Anatomical Whale

Anatomical diagrams of whales can tell us something about the state of knowledge both of anatomy in general, and of whales in particular in early modern Japan. First, what kind of anatomical

knowledge is demonstrated by illustrations like the one from *Rokugei no zu* in Figure 3.1? Only four of the five solid viscera in Chinese traditional medicine have been

labelled in this image: lung, spleen, liver and kidneys (the missing viscera is the heart). There are also only two of the five corresponding hollow viscera shown, the small and large intestines (Figure 3.2). Therefore, if this is a diagram based on East Asian medical understanding, it is incomplete. In Japanese medicine and the traditional Chinese medicine on which it is based, the

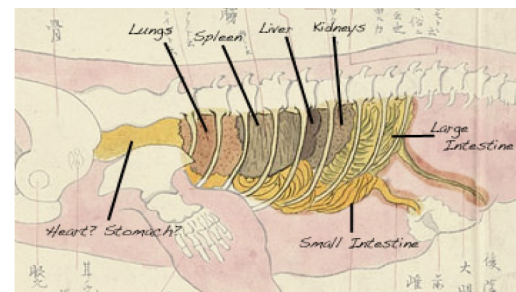


Figure 3.2: Internal anatomy of a right whale with organ labels in English. Adapted from Beiga, *Rokugei no zu* (1847), National Diet Library of Japan #7-731.

details of anatomy do not receive the same focus that they do in Western medicine. East Asian medicine did not place a heavy emphasis on being able to view and directly interact with the inside of the body, so medical texts were far less likely to contain illustrations looking anything like a Western anatomical diagram.⁵ Therefore, it is reasonable to assume that the greatest influence on the production of this diagram comes from Western medicine. However, if this anatomy was produced solely on the basis of Western medical knowledge, it should still show a heart and also a stomach. These are both fairly basic organs, although in this tradition there is not a conveniently numbered set of major organs to correspond to the Chinese medical understanding of internal anatomy. It is possible that these missing organs are hidden behind the pectoral fin or the lungs. However, the area in front of the lungs which could be either stomach or heart is not labelled as anything, and the spleen would not be so prominent in the Western medical model, so the labels are not entirely explained by assuming a problem with the perspective obscuring some organs.

Furthermore, other parts of the whale underneath the diagram of the body fall into a different area of expertise. The influence of the production of edible parts appears in the label for "white meat" (*shironiku*), pointing at the close-up view of one tail fluke and the base of the baleen drawn to the left of that (Figure 3.3). Also, specific bones such as the jawbone, vertebra and scapula were drawn below the whale, as well as a rib with no label,



Figure 3.3: Whale parts under the right whale anatomy diagram. The white meat is labelled on the original, but the rib was drawn with no label. Adapted from Beiga, *Rokugei no zu* (1847). National Diet Library of Japan #7-731.

indicating parts that were interesting in some other fashion.⁶ There is also an interesting label on

⁵ Shigehisa Kuriyama, *The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine* (New York: Zone Books, 1999).

⁶ For more about what was done with various parts of whales, see Chapter 2.

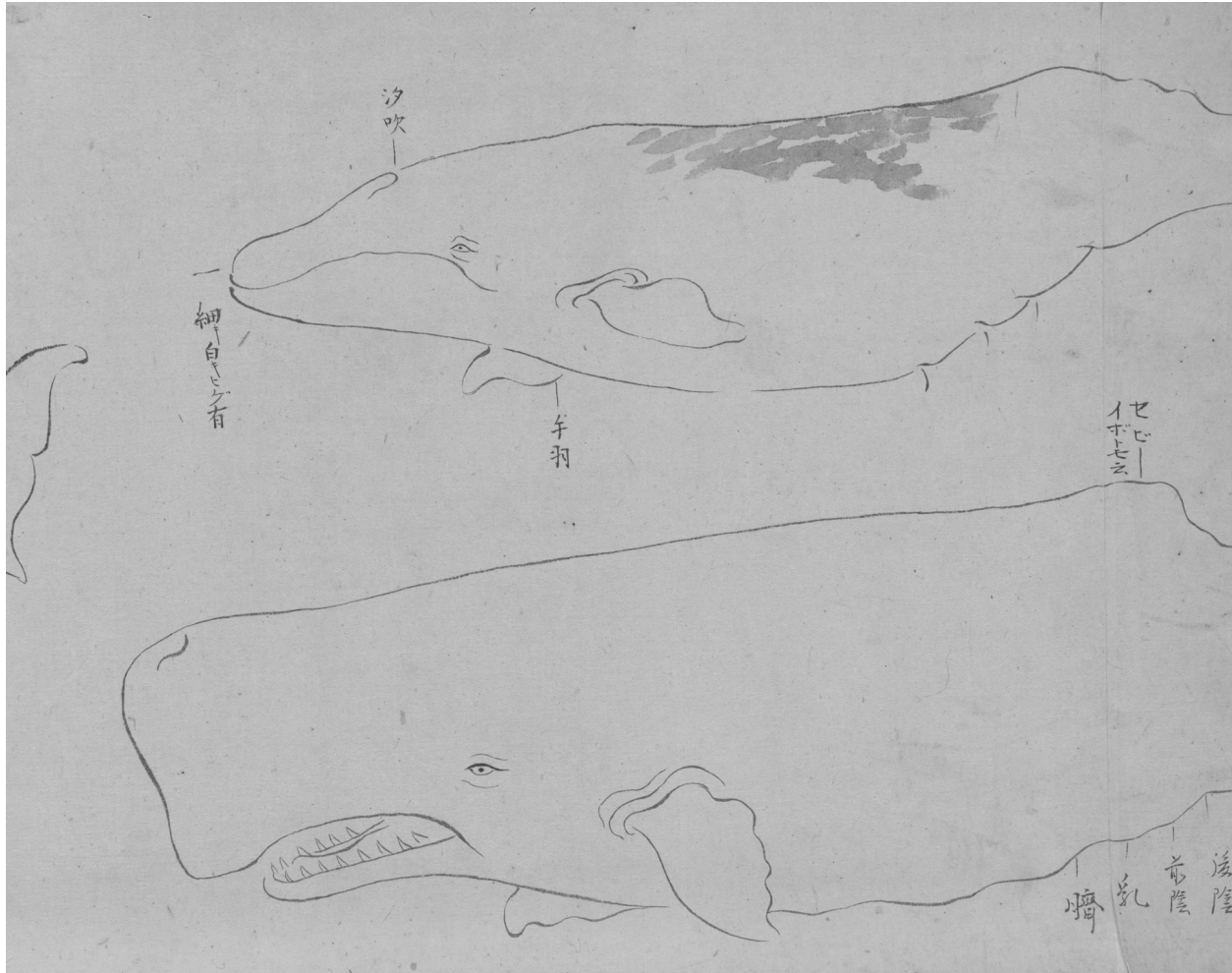


Figure 3.4: Outline drawings of a gray whale and a sperm whale, just to the left of the right whale anatomy diagram. Beiga, *Rokugei no zu* (1847), National Diet Library of Japan #7-731.

the area around the genital opening, identifiable by its white coloration and the "nipples to the right and left of the female genitals."⁷ This label shows some understanding of the reproduction of milk-providing whales, despite their classification as fish at the time.

This image is specifically a right whale, a favored target species for many whaling peoples. The scroll does contain images of other whale species, and provides drawings of more than the six whales indicated by the title. Apart from the right whale's anatomical illustration, all are simple outline drawings colored with light washes, with only a few external features

7 "陰門之左右二有乳: *inmon no sayū ni aru chi*", Beiga, *Rokugei no zu*.

indicated (Figure 3.4). Essentially, the information provided for species other than the right whale is limited to these externally visible features, and sometimes indications of the size and weight of average whales of that type. So, what motivated someone to produce such a detailed depiction of this anatomical whale in the midst of a simple categorization of whale species?

From a scientific perspective, the most interesting feature of the image in *Rokuhei no zu* is the detailed view of the internal organs. Human anatomical drawings based on European medical dissections appeared in Japan in the Dutch version of Kulmus' anatomy textbook, *Ontleedkundige Tafelen*. After physician and Dutch studies scholar Sugita Genpaku (杉田玄白) witnessed the dissection of a criminal in 1771, and compared what he saw to the images in the Kulmus' text, he was inspired to produce a collaborative translation, *Kaitai shinsho* (解体新書), published in 1774.⁸ This was a landmark publication, as both Timon Screech and Shigehisa Kuriyama have argued, because the appearance of these anatomical images heralded a new way of seeing and thinking about the body and about medicine in Japan.⁹ It would be simple enough to assume that the increased interest in this anatomical medicine would result in the same kinds of illustrations of human and animal internal anatomy produced in Europe. However, the problem is that whales were never a common subject for scholarly dissection, and certainly not for the vivisection on which many of the early modern European advances were made. There is some indication that Japanese anatomists were interested in dissecting other animals. Yamawaki Tōyō (山脇東洋) was the author of *Zōshi* (蔵志), the earliest Japanese text dealing with human

8 Kyurumus (Kulmus), *Kaitai shinsho*, trans. Sugita Genpaku, et al., Wa-490.9-15 in the National Diet Library, Japan (Tobu: Suharaya Ichibei, 1774). The Dutch text was itself a translation of the German *Anatomische Tabellen*. For background information on Dutch studies and the people involved, along with portions of the original texts, see the online exhibition by the National Diet Library, "Japan-Netherlands Exchange in the Edo Period", <http://www.ndl.go.jp/nichiran/e/index.html>, 2009. Accessed January 21, 2013.

9 Kuriyama, *The Expressiveness of the Body*, particularly chapter 3, pages 111-151, discusses the problem of anatomical sight and why it is intertwined with Western medical practices and not Asian ones. Screech, *The Western Scientific Gaze and Popular Imagery in Later Edo Japan: The Lens within the Heart*, 88-89 also discusses briefly the *Kaitai shinsho*'s publication and what it meant for ways of seeing in Japan.

internal anatomy from the perspective of dissection. His teacher, Gotō Konzan (後藤艮山), suggested that he should dissect otters in order to understand human internal organs. Tōyō apparently followed Konzan's advice, but any illustrations he may have made do not survive.¹⁰ Thus, even though some scholars in Japan did consider it worthwhile to investigate animal anatomy to understand human anatomy, there are no other illustrations of animal anatomy from Japan during this period. While the introduction of Dutch medical texts was an important factor in the production of this diagram, it is therefore not the sole inspiration.

Another version of whale organ diagrams, these laid out as a simple outline drawing in a similar fashion as a view of human organs, appears in Ōtsuki Heisen's (大槻平泉) 1808 manuscript *Geishikō* (Figure 3.5). Despite the more human-like orientation, with the windpipe at the top of the drawing and the lungs laid out on either side, with the rest of the organs below them, the labels are not always equivalent to human organ labels. For example, a simple designation of "bean" (*mame* 豆) was given for kidneys.¹¹ It was not until the 1829 publication of *Isanatori ekotoba*, a book about the Ikitsukishima whaling operation in Kyushu, that the organ diagrams in *Geishikō* were glossed with human equivalents (Figure 3.6).¹² Therefore, the knowledge that scholars were getting from whalers was not necessarily a comparative anatomy where people were looking for organs of similar function in different species. It was only later analysis by other writers which made this comparison. Both the encyclopedic *Geishikō* and also the later *Isanatori ekotoba* were important nineteenth-century texts joining scholarly interests in

10 This is described by Ogawa Teizō, "Nihon kaibōgaku shi," in *Meiji-zen Nihon igaku shi*, ed. Nihon gakushiin Nihon kagakushi kankōkai (Tokyo: Nihon Gakujutsu Shinkōkai, 1955), p 85.

11 Ōtsuki Heisen, *Geishikō*, 6 vol. Kotenseki shiryō (kichōsho nado) #130-72 (National Diet Library of Japan, 1808). This diagram appears in vol 3, p 50 in the digitized version, <http://dl.ndl.go.jp/info:ndljp/pid/2610476>. The original version has no page numbers.

12 For a thorough discussion of *Isanatori ekotoba*, see Nakazono Shigeo and Yasunaga Hiroshi, *Kujiratori emonogatari* (Fukuoka-shi: Gen Shobō, 2009) and Mori Hiroko and Katsunori Miyazaki, "Tenpō sannen 'Isanatori ekotoba' hankō no haikai (The Publication of 'ISANATORIEKOTOBA' (Whaling Picture) in the Edo Period)," *Bulletin of the Kyushu University Museum* 8 (2010): 1-16.

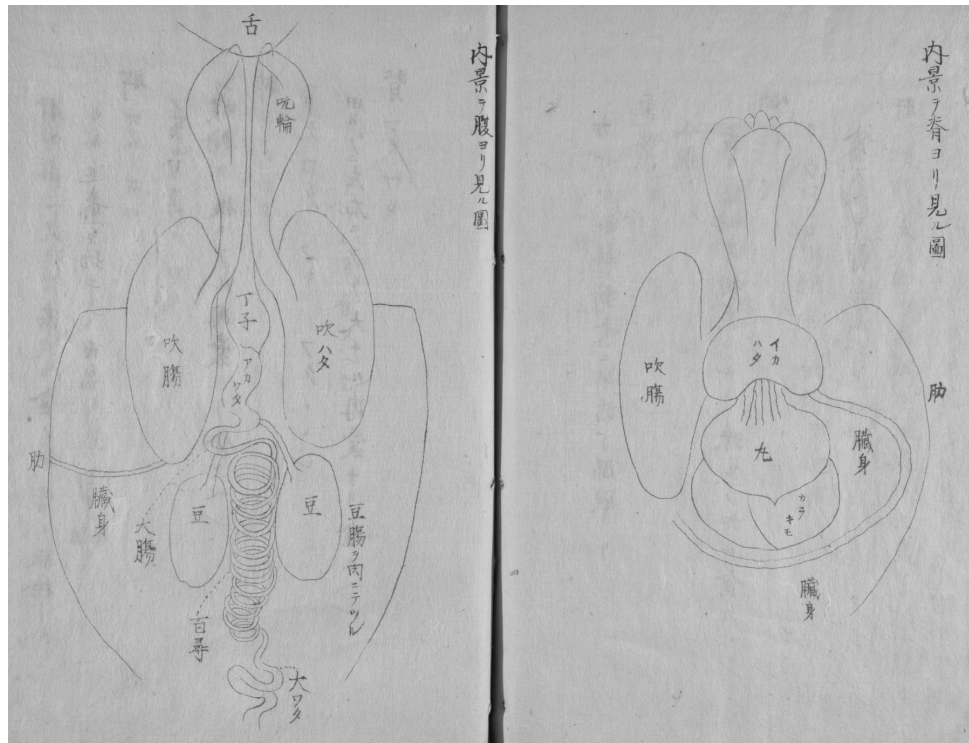


Figure 3.5: Diagram of whale internal organs, *Geishikō*, (1808; National Diet Library of Japan #130-72). Vol 3, p 50 in the digitized version: <http://dl.ndl.go.jp/info:ndljp/pid/2610476>.

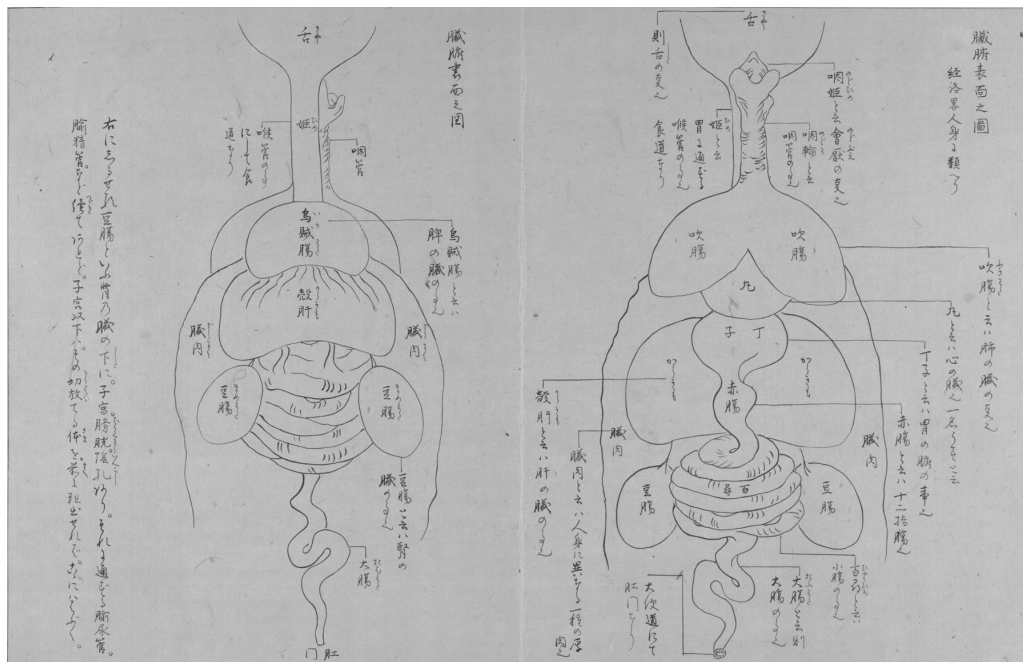


Figure 3.6: Diagram of whale internal organs, Oyamada Tomokiyo, *Isanatori ekotoba* (Edo, 1832; National Diet Library of Japan #特7-651) p 9 (p 11 of the digitized version found at <http://dl.ndl.go.jp/info:ndljp/pid/2576170>).

natural history and philosophy with medical scholarship (often not mutually exclusive interests in this period) and with the experience of whaling groups. But before considering these texts in more detail, it will be useful to consider the kinds of whale illustrations without anatomical information produced earlier in the Edo period.

The Illustrated Whale: Picture Scrolls of Whale Species

One common type of whale illustration from the period is of the external view of different species of whales, usually more colored-in than the outlines of the species in *Rokugetsu no zu*. These are sometimes only minimally labelled with the species of whale illustrated.¹³ For the ones that do have more detailed labels, the labels indicate what the artist thought of as distinctive or unusual features. These labels can thus tell us something about the kinds of categories under which whales were being classified, or what might have driven the curiosity about whales that led to their illustration. The reason I mention classification here is that the majority of illustrations show a variety of species. Some include interestingly-shaped fish along with the assortment of whales.¹⁴ Illustrations of this type are not just portraits of an individual whale, but rather long scrolls comparing different types of whales (and fish). The fact that these were copied and recopied by artists who had never seen a whale in person becomes clear in some of the warped views of whales on these types of scrolls. Having enough interest in whale images to make a copy of them did not necessarily imply having any real knowledge about whales. The best example of this problem is the version of a whale anatomy picture from the end of an

13 For example, the whale species and some short description such as the length and amount of oil taken from them are given for the whales in Yamauji Tokishige, *Kujira emaki*, #1463 in Saigyotō bunko collection (Tokyo: National Institute of Japanese Literature, 1778), but no whale parts are labelled.

14 For example, Anonymous, *Kujira emaki: Kishū Kumano shogei no zu*, #1461 in Saigyotō bunko collection (Tokyo: National Institute of Japanese Literature, 1723) has recognizable depictions of an ocean sunfish, hammerhead shark, and other sharks and rays along with the whales illustrated.

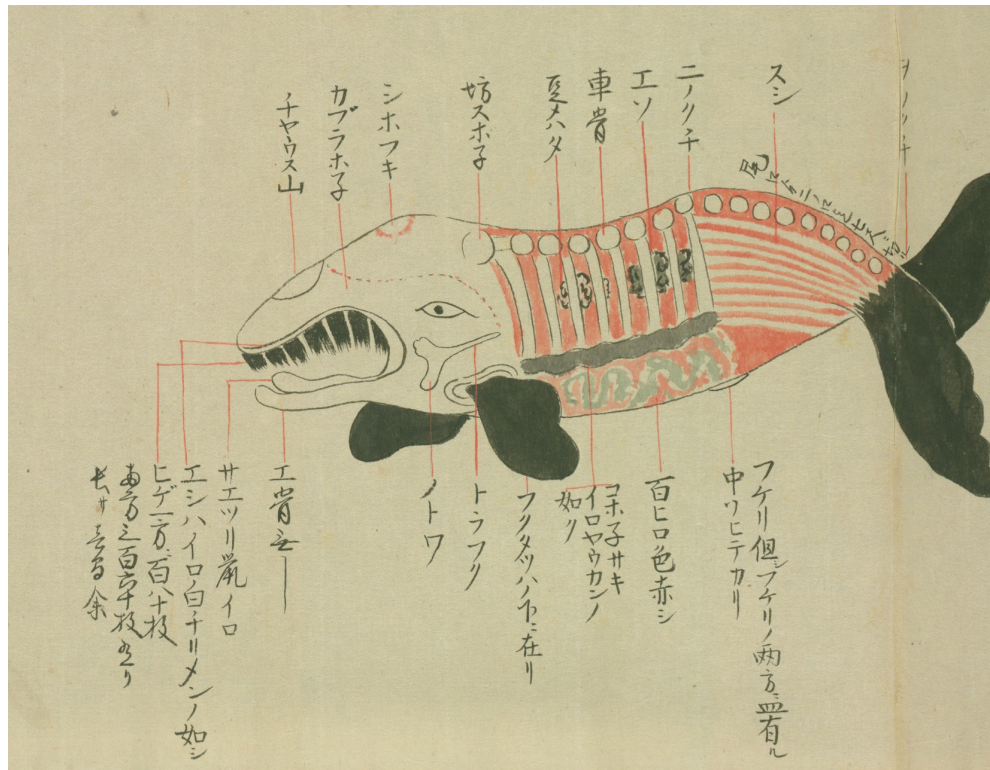


Figure 3.7: Rough anatomical diagram of a whale at the end of a scroll with assorted species of whales, sharks and other unusual fish. Anonymous, *Kujira no zu*, National Diet Library, Japan manuscript 特7-729.

anonymous scroll entitled *Kujira no zu* (鯨之圖; Figure 3.7).¹⁵ This whale is much more stylized than the one in *Rokugei no zu*, or even some of the other copies of scrolls with unlabelled anatomical whale diagrams. The internal organs have been reduced to scribbles behind straight lines indicating the ribcage, even though there are labels on the diagram for proper anatomical parts like tendons and the esophagus.

Another, more representative copy is *Kozaura hokei emaki* (古座浦捕鯨絵巻 held by the Shirahama Kaiyō Bijutsukan in Chiba Prefecture), which also contains an anatomical drawing of a right whale. In this set of scrolls, each of the other (non-anatomical) whales is shown with a label for the name of the species and a mark for the blowhole. While not all scrolls of whale pictures contained anatomical drawings, these illustrated parades of whales and sometimes other

¹⁵ Anonymous, *Kujira no zu*, (National Diet Library, Japan #特7-729).

strange fish types were common. The first of the four scrolls in the *Kozaura hogei emaki* set begins with left-side views of humpback, fin, gray and right whales. This is followed by an unusually-labelled sei whale marked as *iwashi kujira katsuo* (鰺鯨鯨). Sei whales are usually referred to as *iwashi* or sardine whales because they appeared in the middle of sardine schools; bonito (*katsuo*) fishermen sometimes used them as indicators of bonito schools also feasting on the sardines, but usually this is not part of the name of the whale. Minor confusions like this could be an indication of the copyist being less knowledgeable about whale species than the original artist, or could indicate conflicting local knowledge about names or a misunderstanding of the explanation given to the artist by a knowledgeable informant. Then there is a killer whale, and something labelled as 江豚 (*kōtan?* *ebuta?*) which refers today in Chinese to the finless porpoise (*Neophocaena phocaenoides*) or a river dolphin. However, the mystery animal has white stripes that do not appear on either river dolphins or finless porpoises.¹⁶ There is only one label for the following two images, which do both appear to be types of pilot whale as labelled. This is followed by an *okiō kujira* (沖才一鯨) which from the name would appear to refer to some kind of small offshore whale species, and then a sperm whale at the end of the scroll. The second scroll in the set illustrates the anatomy of a right whale and the various parts it is cut into, along with the tools for the hunt. Thus, descriptions of different species might have been seen as something separate from anatomical knowledge. The artist for this particular version, at least, seems to have thought of anatomy as most related to the disarticulation of a whale being broken down into its component products.¹⁷

16 Perhaps it is meant to illustrate a Pacific white-sided dolphin or other dolphin species? Unfortunately the stripe pattern does not match well with known species today.

17 Reproduced in Kushimoto chōshi hen-san iinkai, *Kozachō shiryō - Hoge hen kaiga shiryō*, ed. Kushimoto chōshi hen-san iinkai, *Kozachō shiryō* (Kushimoto-chō: Nishioka sōgō insatsu KK, 2008), 6-40. For the first scroll of the set, the humpback whale is on p 7, fin whale on 8-9, gray whale on 10, right whale on 10-11, sei whale on 12, killer whale on 13, the unknown species of dolphin on 13-14, pilot whale on 14-15, some kind of "offshore whale" on 15, and a sperm whale on 16. The second scroll begins on page 17 with an anatomy drawing.

It is tempting to assume that a series of illustrations of different types of whales and other unusual forms of fish like in *Kozaura hogei emaki* should correspond to a sort of early field guide to species that we know of today. It is, of course, dangerous to assume that ideas of species classification from the philosophical systems in early modern Japan will overlap exactly with modern scientific understandings of species. But there is some indication in these scrolls that they were meant to at least be a kind of catalog of species of whales, if not a field guide per se. Another scroll also titled *Kozaura hogei emaki* (at the National Institute of Japanese Literature) has finely drawn whales with short descriptions for each. They all share labels for tail flukes, pectoral fins, blowholes, and notes indicating whether they have teeth or baleen. This artist determined that it was not just the blowhole that set whales apart as interesting, but also these other bodily features which they do not share with fish.¹⁸ There is nothing written on the first *Kozaura hogei emaki* scroll to indicate why those particular species were chosen. However, this second version has text at the end indicating that they are illustrations of whales that have been caught in Koza, with their forms carefully copied in this scroll.¹⁹ That could indicate that at least some of these scrolls originated as a kind of report on what the whalers in different areas were catching. Because the scrolls also contained interesting images, they could have been copied over as a record of strange fish without any specific tie to the whaling enterprise's targets. Similarly, a set of scrolls known as *Kujira oyobi iruka kakashu no zu* (鯨及海豚各種之図), and a book version of them titled *Kujira oyobi iruka no zu san maki* (鯨及海豚之図 3卷) of uncertain date and authorship, are clearly copies from another anonymous set of scrolls labelled

18 Ibid, 41-51. Included species: right whale (once side view, once with mouth open), humpback whale, gray whale, sperm whale, fin whale, some kind of dolphin, what might be a pilot whale, Baird's beaked whale, killer whale, and sei whale.

19 Ibid., p 51.

Kii no kuni Kumanokai geizu (紀伊国熊野海鯨図). This connection is explicitly stated in the final text on *Kujira oyobi iruka kakashu no zu*'s second scroll.²⁰

Unfortunately, while there are multiple copies of whale-image scrolls extant, they do not indicate the original source of whale anatomy drawings, nor do many of them indicate the author of the copy. The only indicator of authorship on *Rokugei no zu* is the name Beiga (米鷺) for the 1847 copyist, so the source of information about anatomy for this work is unclear. However, the final text also references southern Kii. It is thus apparent that at least some of the anatomical information about whales came from the whalers along the Kumano coast in what is now Wakayama Prefecture. Four other scrolls depicting a right whale's anatomical image similar to the one in *Rokugei no zu* have less detailed labels and are of even more uncertain authorship and either of unknown time period or from a later date. Their similarity in style makes it reasonable to assume they are part of a set of copies of a Koza image that is now lost.²¹ The lack of detailed information about authorship and date of production in such scrolls makes it impossible to determine when and why the earliest version of such an image appeared. Still, *Kozaura hogei emaki* (古座浦捕鯨絵巻: Illustrated scroll of Koza village whaling), includes a simpler but clearly analogous image to the one in *Rokugei no zu*, showing that there likely was a chain of copies being made of this striking anatomical drawing.

20 The National Diet Library has two versions of the three-scroll set of Anonymous, *Kii no kuni Kumanokai geizu*, in the Kotenseki shiryō: Kichōsho nado collection: #特7-730 and 特7-732. Anon., *Kujira oyobi iruka kakashu no zu*, ち二-17 in the same collection is in three scrolls, while Anon., *Kujira oyobi iruka no zu san maki*, #859-4, is divided into three hand-bound unpublished books.

21 The scrolls Hanii, *Hogei no zu*, Saigyotō bunko #346 (1882; Tokyo: National Institute of Japanese Literature). and Anonymous, *Hogei no zu*, in the Barthelmess Whaling Collection (Cologne; also available from the Kyushu University Digital Archive, <http://record.museum.kyushu-u.ac.jp/kujira/eurokujira/eurokujira.html>) have similar images to *Rokugei no zu*, but these are both later copies. There is no date on the Barthelmess manuscript but there is a stamp from the Taiwan Imperial University Library which likely indicates a later date of creation. There are also the two *Kozaura hogei emaki* reproduced in Kushimoto chōshi hen-san iinkai, *Kozachō shiryō*, which at least are labelled clearly as originating from Koza.

Two men, Noro Genjō (野呂元丈) and Natsui Matsugen (夏井松玄), were sent on domainal orders to visit Taiji village in 1721. The record of their visit provides some indication of how copying and transmission of whaling-related information from the Kumano area could happen. These two emissaries acquired a picture of a whale or of whaling drawn by whaling leader Kan'emon (寛右衛門), which was then annotated by *honzōgaku* scholar Niwa Shōhaku (丹羽正伯) and passed along to the bakufu.²² It is unclear whether this image is the one that was copied to produce *Rokugei no zu* and other anatomical paintings. The note referencing southern Kii on *Rokugei no zu* certainly implies that such trips to the villages in the Kumano area could include discussions with whaling leaders and the copying or acquisition of whale or whaling pictures. Such visits would have been particularly likely in the case of Koza, where whaling operations were supported by the domain beginning in 1668 (far earlier than for the private operations in nearby Taiji and Miwasaki).²³

As with *Rokugei no zu*, other scrolls with anatomical drawings also have images of whale parts resulting from rendering whales down into oil, various cuts of meat, fertilizers, and pieces of bone, baleen, and sinew. But there is a difference between showing the ways that a whale was cut apart and the particular, carefully labelled distribution of their internal organs. The puzzle arises in this missing step between what was visible to someone visiting the beach when a whale was being rendered, and the cutaway view of internal organs which no one would ever have seen in reality. Clearly emissaries to the Kumano whaling villages from the Kishū domainal seat in Wakayama city collected information not just about the potential value of the whaling enterprise, but also about parts of the whale more relevant to studies of medicine - including the anatomical studies inspired by Dutch imports. The strong ties between traditional natural history (*honzōgaku*

22 Isono Naohide, "Edo jidai kujirarui zuzetsu kō (Old Illustrations of Whales)," *Hiyoshi Review of Natural Science* Keio University No. 16 (1994). His original name is Niwa Teiki.

23 Yamashita Shōto, *Hoge I, Mono to ningen no bunkashi* 120 (Tokyo: Hōsei Daigaku Shuppankyoku, 2004).

本草学) knowledge of organisms and medical uses for those organisms provide an easy link between scholars interested in animals-as-products and also in the internal workings of their bodies. One illustrated whale scroll dated to 1764 comments on the source from which the author copied his images of whales, noting that they were done from life on the order of the shogunal government in 1721.²⁴ In *Kozaura hoge emaki*, the note written at the end of the scroll explains merely that it illustrates the whales that have been caught in the village of Koza.²⁵ However, from other references, it seems that some original version of *Kozaura hoge emaki* was under control of the government officials in Koza at least as early as 1726, based on the trip made by Noro Genjō and Natsui Matsugen in 1721, and copies made from that original were sent to the domain's chief retainer, with known dates of copying including 1751 and again in 1798.²⁶ Noro Genjō, in fact, was a *honzōgaku* scholar who had been commanded by Tokugawa Yoshimune to study Dutch in order to help translate two of the most influential books for natural history imported into Japan: Johann Johnston's lavishly illustrated *Historia naturalis* and Rembertus Dodonaeus' botanical *Crujdeboeck*.²⁷ Natsui Matsugen was *honzōgaku* scholar Niwa Shōhaku's student.²⁸ Niwa Shōhaku worked at the production of medicines around the country for the shogunal government and was later in charge of a massive survey of natural resources in each domain (more on this below).²⁹ The earliest known work solely about whales in Japan, *Geishi*,

24 Ueno Masuzō, *Nihon dōbutsugakushi* (Tokyo: Yasaka Shobō, 1987), p 246-7.

25 Kushimoto chōshi hen-san iinkai, *Kozachō shiryō*, p 41-51.

26 Ibid., p 630.

27 The version of Johnston's book that was available in Japan was a Dutch translation from the original Latin, entitled *Naeukeurige beschryving van de Natuur der vier-voetige dieren, vissen en bloedlooze water-dieren, vogelen, kronkel-dieren, slangen en dranken* ("Accurate description of the nature of four-footed animals, fish, and bloodless fish, birds, insects, snakes and dragons"), published in Amsterdam in 1660; as noted in Federico Marcon, "The Names of Nature: The Development of Natural History in Japan, 1600-1900" (Columbia University, 2007), p 220. For more on Dodonaeus in Japan, see W.F. Vande Walle and Kazuhiko Kasaya, *Dodonaeus in Japan: Translation and the Scientific Mind in the Tokugawa Period* (Leuven: Leuven University Press, 2001).

28 Ueno, *Nihon dōbutsugakushi*, p 246.

29 Wakayama shiritsu hakubutsukan, *Edo jidai no dōshokubutsu zukan: Kishū no honzōgaku o chūshin ni* (Wakayama: Wakayama-shi kyōiku iinkai, 1994), p 61.

was also written in 1670 by a Kii native with an interest in *honzōgaku*. This text, like the reports later written for the domainal government, was based on his personal experience of trips to the whaling villages of Taiji and Koza along the Kumano coast of Kii domain.³⁰ Why were *honzōgaku* scholars so interested in whales? The answer to this question requires a more detailed look at developments in natural history and medicine in Japan.

Classifying Whales: Natural History Knowledge

The classification system used to understand the natural world in early modern Japan, *honzōgaku*, was originally based on the Chinese materia medica system classifying natural substances in reference to their effectiveness in medical preparations. This was a very comprehensive system in China, where all natural substances were seen as having potential medical uses and could be possible ingredients in pills and tonics used to rebalance internal flows of vitality.³¹ However, when encyclopedic Chinese materia medica texts arrived in Japan, scholars soon discovered difficulty matching up the contents with the natural substances found (or not found) in Japan. One historian of science, Ueno Masuzō (上野益三), dates the start of scientific natural history in Japan to 1613, with the arrival of the Chinese materia medica text known as the *Bencao gangmu* (in Japanese, *Honzō kōmoku*, Compendium of Materia Medica).³² This book was first imported seventeen years after it was published in China, and was part of a long line of materia medica books dating back to at least the eighth century. It was more influential in the development of Japanese natural history than its precursors because it did not focus solely on medical effects. The *Bencao gangmu* was an encyclopedic text that listed the

30 Ueno, *Nihon dōbutsugakushi*, page 247.

31 For a comprehensive view of the history of traditional Chinese medicine, see Paul U. Unschuld, *Medicine in China: A History of Ideas* (Berkeley: University of California Press, 1985).

32 For a discussion of *Bencao gangmu*, its contents and its place in the development of natural history in early modern China, see Carla Nappi, *The Monkey and the Inkpot: Natural History and Its Transformations in Early Modern China* (Cambridge, MA: Harvard University Press, 2009).

properties of many objects and species in the natural world. It organized things under the categories for the five phases: water, fire, earth, metal (including stones) and wood (including all plants). These basic categories served a similar purpose to European categorization by the four elements, indicating the essential nature of a substance and how it might affect the balance of forces in the body. However, the author also included three other categories: implements made of natural materials, beasts of all kinds, and different types of people. These sections offered a categorization more like descriptive natural history. The animals were ordered by outer characteristics such as scales, armor, feathers or fur. Within each of these categories, they were further grouped by similarity, sometimes with consideration of their habitat, and from the most prototypical example of the category to the most unfamiliar or dangerous.³³ In many entries, natural history information was provided "because the qualities of a creature in life help[ed] determine its use in death."³⁴

In translating the *Bencao gangmu*, scholars looked for useful qualities of Japanese natural resources to correspond to those listed for Chinese entries. One of the most influential developments in Japanese natural history appeared in 1709, when Kaibara Ekiken published his Japanese materia medica *Yamato honzō* (Japanese Herbal/Materia Medica), which focused more narrowly on practical usability of natural substances in Japan rather than attempting to directly translate the *Bencao gangmu*. It listed only those species found in Japan and provided only information of direct relevance to pharmacology or agronomy.³⁵ His work inspired the collection of information about new plants and animals found in Japan and not in China, a process that helped make *honzōgaku* into a form of natural history research rather than just materia medica.³⁶

³³ Ibid., especially pages 71 and 113-114.

³⁴ Ibid., 57.

³⁵ Kaibara Ekiken, *Yamato honzō*, 1709, in Ekikenkai, ed. *Ekiken zenshū* (Tokyo: Ekiken Zenshū Kankōbu, 1911).

³⁶ See Marcon, "The Names of Nature," chapter 2, especially page 79.

Chinese medicine is founded on the theory that food in general should be treated as medicinal, and care should be taken in everyone's diet to promote health. In trying to fit Chinese materia medica into a Japanese context, scholars began to consider the classification of Japanese foods, including many shellfish and fish (including whales) that do not appear in the *Bencao gangmu*.³⁷ The highly influential encyclopedia published by the physician Terajima Ryōan in 1712, known as the *Wakan sansai zue* (Illustrated Sino-Japanese Encyclopedia), includes entries for 125 different fish (broadly defined, including whales, jellyfish and shrimp). While Ryōan did rely on the *Bencao gangmu* for some of his basic descriptions of species, there are only 59 fish classified in *Bencao gangmu* and only 52 given in Ryōan's other major inspiration, the Chinese encyclopedia *Sancai tuihui* (三才圖會: Illustrated Compendium of the Three Powers [Heaven, Earth and Man], Jp. *Sansai zue*). For example, while Ryōan preferred to cite the *Bencao gangmu* at the start of entries where there was an equivalent in China, he was forced to reference the Chinese encyclopedia's vague legends of whales to start his entry. Most of his information on whales is from other Japanese sources, including Kaibara Ekiken's *Yamato honzō*, which includes a reference to whaling and whales' edible parts, as well as describing the oil that was extracted for lamps.³⁸ Ryōan's encyclopedia entry is longer than Ekiken's, relying on sources outside of natural history, but includes details on the major parts of whales bodies, descriptions of their seasonal migration patterns, and individual descriptions of each of the six species commonly found near the Japanese coast.³⁹

37 Morita Katsuaki, *Kujira to hōgei no bunkashi*, (Nagoya-shi: Nagoya Daigaku Shuppankai, 1994) discusses the links between *honzōgaku* and whales/whaling in Chapter 4.7 "Honzōgaku to kujira," 210-216.

38 Kaibara Ekiken, *Yamato honzō*, 333. This entry is in the 13th maki (volume or scroll) of *Yamato honzō*, devoted to ocean fish.

39 Terajima Ryōan, *Wakan sansai zue*, Tōyō Bunko 471, Shimada Isao, Takeshima Atsuo and Higuchi Motomi, eds. (Tokyo: Heibonsha, 1985 (1712)), 198-203. The entry on whales is at the start of maki (volume) 51: Bay and ocean fish without scales.

Even though the field of study known as *honzōgaku* began as a practical search for medically useful products, historian of science Federico Marcon explains that "by the first half of the eighteenth century [*honzōgaku*] had developed into an eclectic discipline of nature study consonant with what was known in early modern Europe as 'natural history'."⁴⁰ Whales were one of the many strange animals which came under investigation within this expanded version of *honzōgaku*, and including in the surveys instituted by Niwa Shōhaku that shaped the development of natural history in Japan. These surveys were ostensibly carried out as part of Shōhaku's revision of a work for the shogunate called *Shobutsu ruisan* (庶物類纂) - an encyclopedia by Ino Jakusui (稲生若水) intended to be "an all-inclusive and rational arrangement of all *honzōgaku* sources and a definitive classificatory system."⁴¹ Unfortunately, most of the survey data never appeared in Shōhaku's revision, which was furthermore never published, so it might seem as if the surveys had little to no influence on natural history in Japan. However, Marcon argues that these surveys were central to shogun Tokugawa Yoshimune's agricultural reform policy. The surveys were an effort to "acquire precise data on land productivity and exploitable resources," so that agricultural reforms to increase productivity could be enacted using those resources.⁴² Some of the exploitable resources they were considering were marine resources. The survey from Chikuzen, for example, provided a list of various types of fish and also described the fishing methods through which they were caught.⁴³ And of course, Shōhaku was already familiar with the whales found in Kii from the earlier report he had compiled for domainal records in 1721.

40 Federico Marcon, "Inventorying Nature: Tokugawa Yoshimune and the Sponsorship of *Honzōgaku* in Eighteenth-Century Japan," in Ian Jared Miller, Julia Adeney Thomas and Brett L. Walker, eds. *Japan at Nature's Edge: The Environmental Context of a Global Power*, (Honolulu: University of Hawai'i Press, 2013) 191. See also Marcon, "The Names of Nature," chapter 4: 210-306.

41 Marcon, "Inventorying Nature," 198.

42 Ibid, 199.

43 Yasuda Ken, *Edo kōki shokoku sanbutsuchō shūsei*, volume 12 (Tokyo: Kagaku shoin, 1996-2005).

Under the political sponsorship of Yoshimune, *honzōgaku* as a field of independent scholarship really began to flourish, in part because of his support for *honzōgaku* scholarship and data collection in the Kyōhō reforms. The Kyōhō reforms, introduced in 1736, had three goals: a comprehensive survey of all Japanese plants and animals, the development of agricultural technologies that could prevent or mitigate the effects of famines, and the establishment of a shogunal medicinal garden which could supply pharmacological substances (like ginseng) which were at that time solely available through Korean or Chinese imports.⁴⁴ By combining all of these things, Yoshimune hoped to improve the economy of Japan by no longer bleeding out silver to pay for foreign medicinal substances that had native counterparts. He also hoped to improve the use of native natural resources in ways that would alleviate the harm of future weather events or pest attacks that in the past had led to major famines. Even the basic lists of what animals and plants were found in domainal surveys contributed to this project, which was directed by natural history scholars and thus helped to spread their form of classification and investigation of the practical uses of the natural world. Many of these surveys included whales, so it is also clear that they were a potential resource in more than one area of the country.⁴⁵

Apart from the trade imbalance for medicinal substances not found in Japan, one of the greatest needs for the development of natural products was to prevent massive famines in the face of crop failures.⁴⁶ As the Tokugawa peace led to prosperity and increasing population, severe crop failures and famines symptomatic of a system pushed to its environmental limits appeared. There were at least three major famines in the latter half of the Tokugawa period which are

44 For details of this project, see chapter 3 of Marcon, "The Names of Nature."

45 Entries for whales appear in at least seven different domains, including Etchū, Owari, Kii, Nagato, Tsushima, Chikuzen, and Mikawa. The whale entries in the surveys for each of these areas are found, in order, in Yasuda, *Edo kōki shokoku sanbutsuchō shūsei*: vol. 1 p. 269, 328 and 420; vol. 2 p. 44; vol. 4 p. 553, 877-8; vol. 6 p. 116, 190; vol. 8 p. 354; vol. 10 p. 95, 313, 380; vol. 11 p. 289, 410; vol. 12 p. 308; vol. 14 p. 312.

46 As agricultural writer Ōkura Nagatsune notes in his justification for writing the treatise *Jokōroku*, in *Nihon nōsho zenshū*, ed. Yamada Tatsuo et al. (Tokyo: Nōsangyoson Bunka Kyōkai, 1977 (1826)), p. 12. See Chapter 2.

believed to have led to tremendous death tolls: the Kyōhō famine of 1732-33, the Tenmei famine of 1782-87, and the Tenpō famine of 1833-1839. The suffering experienced during these major famines was a strong motivating factor in attempts at reform and improvement to prevent further famines. The first of these, the Kyōhō famine, was most severely felt in central and western Japan. After a series of poor harvests, then heavy rains in early 1732 which ruined the winter wheat and barley crops, a disastrous outbreak of *unka* (planthoppers or ricehoppers) destroyed possibly as much as 90% of the following season's rice crop.⁴⁷ While Yoshimune and his officials had been searching for ways to improve knowledge of domainal resources before this famine, the timing of the Kyōhō reforms was driven by this famine in particular. Surveys in each domain of all the agricultural products, plants and animals within their boundaries (including marine products) were part of Yoshimune's Kyōhō reforms.⁴⁸ Most of the records produced by these surveys are simple lists of available products, rather than detailed notes on the natural history of each domain. In some cases, however, the people who recorded this information did offer more details, such as in the survey of both fish and fisheries from Chikuzen mentioned earlier.⁴⁹

Outside of the work done by *honzōgaku* scholars trying to classify and survey whales, and beyond the specialized anatomical diagrams that appeared in some collections of whale images, simple illustrations of whale species also had a place in scientific understanding of the natural world. Realistic illustrations of plants and animals were an important part of natural history, at least as it appeared in the Western-inspired, *hakubutsugaku* (博物学) format. The

47 Arne Kalland and Jon Pedersen, "Famine and Population in Fukuoka Domain During the Tokugawa Period," *Journal of Japanese Studies* 10:1 (1984), p 40. Both the Japanese name *unka* and the English name planthopper cover a wide variety of species of insect in the order Hemiptera which feed on the phloem of rice plants, killing them. Brett Walker, in his discussion of the Kyōhō famine in *Toxic Archipelago: A History of Industrial Disease in Japan* (Seattle: University of Washington Press, 2010), identifies these planthoppers as from three different species: the brown planthopper *Sogatella furcifera*, the white-backed planthopper *Nilaparvata lugens*, and the six-spotted leafhopper *Cicadula sexnotata*.

48 These surveys have been collected and reproduced in 21 volumes in Yasuda, *Edo kōki shokoku sanbutsuchō shūsei*.

49 Ibid. volume 12.

illustrations which appeared in early *honzōgaku* texts were not necessarily realistic, as this classification system relied more on matching correct names to things than to checking observations against a standard. But as this area of scholarship became more popular, it also developed from a way of finding utility in natural resources into a focus on accurate description, depiction and classification of plants and animals.⁵⁰ As part of the popularity of *honzōgaku*, there was a boom in detailed illustrations of plants and animals beginning in the late eighteenth century. When Niwa Shōhaku was collating the information from his Kyōhō reform surveys, he would send back requests for detailed drawings of some of the species listed. Marcon argues that the increasingly central role of realistic plant and animal illustrations in natural history writing by the end of the eighteenth century arose from "the important role that Shōhaku attributed to them in editing the surveys."⁵¹ Animals and plants had long been a theme in art of the "flowers and birds" type, in both China and Japan. But until the eighteenth century, animals in this type of art (which were not limited to just birds) generally were linked to Buddhist or Shinto iconography. In the eighteenth century, artists developed a new, more inclusive style which was meant to represent realistically the different animals in the world. For exotic animals like the camels brought to Japan by the Dutch, popularized first in sideshows and then in published illustrations, realistic pictures became part of a complete understanding of the characteristics of the natural world. Such understanding fell under the category of *honzōgaku*, but as it became more influenced by Western science and illustration it became known as *hakubutsugaku*.⁵²

Art historian Maki Fukuoka shows how these types of realistic illustrations of the natural world were an essential part of the process of codifying natural history knowledge before the introduction of photography in the late 1870s. Demonstrations of natural products and exotic

50 Marcon, "The Names of Nature," chapter 4.

51 Marcon, "Inventorying Nature," p 202.

52 Imahashi, *Edo no dōbutsuga*, p 12-30.

specimens known as *bussankai* (物産会) belonged partly to mass entertainment and spectacle, and were closely related to the *misemono* (見世物) shows discussed below. However, they were originally intended to share natural history knowledge of things as they were, in the same way that carefully painted images could play a role in defining the characteristics that made a certain animal distinct from other species. These expositions sometimes even included colored pictures as part of the set of objects being classified. Maki argues that the *hakubutsugaku* scholars at these exhibitions understood the organization of plant types in part through copying and imitation of illustrations shown at the *bussankai*.⁵³ Observation and discussion of classification into the Linnean system was particularly important in Japanese botany because Linneaus also began his system with plants. But the problem of making personal observation of difficult-to-find animals such as whales could also be solved through realistic illustration, so animal classification was similarly shaped by developments in illustration. This trend may help explain the proliferation of scrolls showing the variety of whales and strange fish species found in different areas of Japan.

Explaining Whales and Whalers: Geishikō and Isanatori ekotoba

Whether or not whale illustrations were an attempt to classify natural history knowledge or were instead part of broader curiosity about strange creatures, they were not the only expression of interest in whales. Descriptions of the process of capturing whales and of the different villages that practiced organized whaling provided another important type of whale-related information. In fact, it was through contact with whalers and their products that merchants and townsfolk like writer Ihara Saikaku (井原西鶴) became most acquainted with whales. In 1688, Saikaku published *Nippon eitaigura* (日本永代蔵), a collection of stories about

⁵³ Maki Fukuoka, "Between Knowing and Seeing: Shifting Standards of Accuracy and the Concept of Shashin in Japan, 1832-1872" (University of Chicago, 2006), p 52-53. The exhibit list for the exhibit she looked at is given in appendix B, page 286-319 where she notes the whale pictures included in the exhibit.

all the various ways the rich get richer while the poor remain poor no matter how hard they work. By this time, the leaders of the whaling groups in Kii were already known for their whale-brought wealth. One of Saikaku's stories, *Tengu Gennai wa ie na no kazaguruma* (天狗源内は家名の風車), focuses on the fictional "Tengu" Gennai (this is a nickname, rather than a description of a non-human *tengu*), a harpooner from Taiji who supposedly gained his wealth from killing an enormous whale with one strike of a harpoon. He also became wealthy because he was intelligent enough not only to find uses for all the parts of the whale, including grinding down the bones for oil when supposedly others had ignored this possibility, but also to invent net whaling for future successful hunts.⁵⁴ While net whaling did indeed spread from Taiji, as noted in Chapter 1, there is no indication that there was (or was not) a harpooner there named Gennai. Furthermore, the manager of the whaling group who benefitted most financially from the hunts, and who is credited with inventing net whaling, was Wada Yoriharu in 1681. Clearly, Saikaku had heard of his wealth, but was not writing completely factual biographies in *Nippon eitaigura*. This text is important less for its accuracy and more for its demonstration of the kind of interest that commoners might have had in whales and whaling. The fascination with whales' size was linked to their potential to make their hunters wealthy, or in other words with their practical role as a natural resource.

Later literary works tended to combine an interest in the behavior of people who caught whales with an interest in information about the whales themselves. Two of the most famous and comprehensive works about whales from the nineteenth century, *Geishikō* (1808) and *Isanatori ekotoba* (1832), combined natural history information, including images of whale species, with

⁵⁴ A reprint of the original text and modern Japanese translation is available in Ihara Saikaku, *Nippon eitaigura*, ed. Asō Isoji and Fuji Akio, vol. 12, *Taiyaku Saikaku zenshū* (Tokyo: Meiji Shoin, 1993), with the whale-related story on pages 60-65. There are also two different English-language versions: *Ibara-Saikaku's Nippon Eitaigura -the Way to Wealth-*, trans. Soji Mizuno (Tokyo: Hokuseido Press, 1955). and *The Japanese Family Storehouse, or the Millionaires' Gospel Modernized (Nippon eitaigura or Daifuku shin chōja kyō)*, trans. G.W. Sargent (Cambridge: Cambridge University Press, 1959 (1688)).

details about the process of capturing whales. A closer look at both of these works will show how different types of information about whales intersected and spread beyond whaling areas themselves. The spread of information was particularly strong for *Isanatori ekotoba*, a woodblock-printed book with a high-ranking audience. As some of its contents were influenced by the earlier *Geishikō*, both works were important vectors bringing whales and whalers more directly into the imagination of people outside of whaling areas.

Geishikō is a manuscript based on Japanese and Dutch sources. It includes whale names and classifications, as well as skeleton and internal organ diagrams and a description of the whaling enterprise in Hirado domain's Ikitsukishima. The anatomical diagrams, interestingly, are of a very different type from the anatomical whale in scrolls like *Rokugei no zu* (Figure 3.5). It was written by Ōtsuki Heisen, a neo-Confucian scholar in Sendai who was a cousin of Dutch studies scholar and doctor Ōtsuki Gentaku. Gentaku's interest in whales began in the 1780s when, in his role as a Dutch studies scholar, he translated a description of a narwhal. Narwhal horns supposedly had medicinal properties, which is why he first became interested in the topic. He may have begun thinking about the narwhal based on the illustration in a Dutch book imported into Japan, Johann Jonston's *Historia naturalis*. This lavishly illustrated book promoted curiosity about the natural history of animals in Japan because its detailed copperplate images of animals were eye-catching even without an understanding of the accompanying text.⁵⁵ In any case, Gentaku started trying to find out more about the animal that produced narwhal horns. Since he was also working on his revised version of Sugita Genpaku's *Kaitai shinsho*, which translated Western anatomical knowledge obtained through dissection, his interest in anatomy merged with his interest in whales to include discussions with whalers about whale anatomy. One

⁵⁵ For information on Gentaku's scholarship and reproductions of the text, see part 2.2 of the National Diet Library's online exhibit of Japan-Netherlands Exchange in the Edo Period, "Activities of Dutch Studies", http://www.ndl.go.jp/nichiran/e/s2/s2_2.html, Accessed January 21, 2013.

such discussion was when he spoke to the former head of the Ikitsukishima whaling group Yamagata Matanosuke (山縣二之助) while treating him for an illness in Edo.

Gentaku's cousin Heisen was not originally interested in whales at all, but when travelling for his school he escorted Gentaku's son to Nagasaki. They visited Ikitsukishima on the way there, to collect information about whaling for Gentaku directly from the source.⁵⁶ Gentaku originally intended to take the information collected by Heisen and publish his own work on whales. But when Heisen brought back more information than he had expected about both foreign and Japanese whaling, Gentaku decided to restrict himself to translation of Western information and leave the rest to Heisen. Heisen actually ended up writing *Geishikō* for the government, as they were becoming interested in possibly setting up whaling stations in the far north to compete with Russia (see Chapter 5). This is another case, like with the domainal product surveys, where scholarship and political concerns intersected in whales. Although *Geishikō* contains whale anatomy diagrams because of Gentaku's medical and scholarly interests, the work itself was written because whaling promised economic, military and political benefits to the shogunal government. It is difficult to know the extent of such a manuscript's circulation. While the text itself might not have been read by many people, the anatomical diagrams were seen by a larger audience when they were copied over in *Isanatori ekotoba's* account of Ikitsukishima whaling (compare Figures 3.5 and 3.6).

Economics and politics were a large factor in the production of *Isanatori ekotoba* as well. In this case, the work was commissioned by the head of the largest and most wealthy whaling group in early modern Japan, Masutomi Matazaemon (益富又左衛門). It was produced at the peak of the Masutomi group's success, with the support and coordination of the Hirado daimyo.

⁵⁶ Mori Hiroko and Miyazaki Katsunori, "Bunka 5, Ōtsuki Seijun 'Geishikō' seiritsu no seijiteki haikai," *Seinan Gakuin Daigaku kokusai bunka ronshū* 25, no. 2 (2011).

The book stands as a demonstration of their economic power to the other daimyo and shogunate. This was a high-quality work intended to be read by ranking members of society. It was published in 1832 in Edo, with the woodcuts done by a top-notch engraver and the text written by a preeminent *kokugaku* (国学) scholar, Oyamada Tomokiyo. Of the 24 copies originally printed, ten went back to the Masutomi group and the remaining fourteen were distributed by the Hirado daimyo to various members of the three main Tokugawa houses and other high-ranking acquaintances.⁵⁷ The information in the book came both from earlier manuscripts like *Geishikō*, from scrolls describing whaling groups in the northern Kyushu Saikai area, and also from material provided by Masutomi Matazaemon to the daimyo. This daimyo, Matsuura Hiromu (松浦熙), had been involved in publishing other books previously, and therefore took a central role in collating and organizing the information for the book. He then passed it along to Tomokiyo to write a polished text. The Edo-based *kokugaku* scholar was likely chosen for this task because both Hiromu and his father, the previous Hirado daimyo, had corresponded with him on questions of etymology, Noh, and poetry.⁵⁸

The book cost over 50 ryō to produce, but given that it was paid for by the Masutomi whaling group, which between 1823 and 1829 paid an astonishing 7700 ryō in taxes alone, they could clearly afford the expense.⁵⁹ In fact, such conspicuous display of wealth seems to have been part of the point of the book. But apart from just showing off their resources, *Isanatori ekotoba* also provides very detailed descriptions of how that wealth was produced. It begins by describing the location of the fishing grounds used by the Masutomi group. It then details how

57 Mori and Miyazaki, "Tenpō sannen 'Isanatori Ekotoba' hankō no haikei," p 12.

58 Ibid., p 5-7.

59 For comparison, Susan B. Hanley, "A High Standard of Living in Nineteenth-Century Japan: Fact or Fantasy?," *The Journal of Economic History* 43, no. 1 (1983) estimates an average farmer's yield from one year's cash crop to be approximately 12 ryō. Thus, the taxes paid during this period were equivalent to the total average cash crop yield of 100 farmers per year every year for six years. The cost of the book, with a detailed account of production expenses, is given in Mori and Miyazaki, "Tenpō sannen 'Isanatori Ekotoba' hankō no haikei," p 4-5.

whaling was done, from the preparation of nets and boats before the season started to the process of the hunt itself and its aftermath as the whales were processed on shore. It even includes information about the dance performed by the harpooners, the specific instruments used to hunt and render whales, and descriptions of whale species, anatomy, and whale-derived products. Finally, the accompanying book, *Geiniku chomihō*, provides a series of recipes, all of which including some kind of whale part (See chapter 2). From the extent of the information collected in this book and the amount of money put into its production, it is clear that *Isanatori ekotoba* was meant to show the usefulness of whales as a natural resource. It also contained information that simply satisfied the curiosity of a reader as to what whales were and how they fit into the contemporary understanding of the natural world. However, this curiosity about what whales were was not limited to scholars and samurai who could afford expensively-illustrated scrolls and manuscripts like this one. People from all walks of life were also able to sometimes see whales for themselves even without travelling to the whaling villages, by attending exhibits and sideshows.

Whales in the Public Imagination: Misemono

Sometimes, what people wanted was not so much to study the details of whales or even see a picture of them, but simply the experience of encountering this rare and massive creature in person. While curiosity about the nature of the world certainly drove *hakubutsugaku* scholars, a different kind of curiosity drove people to come have an in-person sensory experience, including the undoubtedly foul smell of a dead whale or its parts, at exhibitions known as *misemono*. These were the sorts of exhibitions which also occasionally showed rare non-Japanese animals like camels or provided shows of acrobats, sword-swallowers, and the like. The word *misemono*

translates literally as an exhibit or show, but is probably better translated as 'sideshow', because like carnival sideshows these were temporary exhibits meant to showcase strange and unusual things for a negligible price of admission. As Andrew Markus explains, *misemono* were popular among all levels of society, and "were a favorite topic of scandal sheet and scholarly disquisition alike".⁶⁰ The attraction of these shows was their novelty, their demonstration of things that were freaks of nature or otherwise very unusual. In fact, one of the ways that Gentaku had tried to research whales for *Geishikō* was to visit the whale stranded in Shinagawa in 1798 and put on display for the people of Edo. Although he was disappointed in how much he could see (or rather, not see) of the whale, there were throngs of other people there who were likely quite satisfied just to have been able to come see the monster on display.

Misemono were an urban attraction, profiting from large city crowds. In fact, one of the earliest records of *misemono* on the Ryōgoku Bridge in Edo is a reference from 1734 to two 35-foot-long beached whales, which shows that urban residents might still have had the opportunity to know not just what whale parts looked like, but also to see entire whales.⁶¹ Another whole whale, this one 55 feet long, was brought to the shogun in 1798 (probably the stranded Shinagawa whale), then returned to the sea. This must have been quite an endeavor, and one which proves that curiosity about whale *misemono* was not limited to the lower levels of society.⁶² Along with two other examples of the exhibition of whole whales, one other kind of whale-related *misemono* that Markus mentions is a whalebone sculpture, so parts of whales were sometimes also novel enough to end up in these shows.⁶³

60 Andrew Markus, "The Carnival of Edo: Misemono Spectacles from Contemporary Accounts," *Harvard Journal of Asiatic Studies* 45, no. 2 (1985), p. 499.

61 *Bukō nenpyō* (Chronicles of Edo), cited in Markus, "The Carnival of Edo," p. 509.

62 As noted in *Ibid.*, p. 518.

63 *Bukō nenpyō*, cited in *Ibid.*, p. 512, 527.

It is important to note that *misemono* were not confined to Edo alone; they could be found in larger provincial cities as well. In the case of whale *misemono* it is likely that the whole whale demonstrations happened less often in the major cities than in areas closer to where the whales had been found, simply because of transportation problems. However, it is unlikely that *misemono* exhibitions per se would occur actually in and around the whaling villages, since even whales which washed ashore (rather than being actively hunted) in a whaling area would have been claimed by one of the whaling groups or villages that had experience with whaling, dismembered and broken down into various products detailed in Chapter 2. In Fukuoka, for example, drifting or beached whales had to be reported to the authorities so they could coordinate an auction for the bones, meat, and whatever else might remain. Some villages even got into fights over who should be allowed the whale, and theft from the carcasses was always a problem.⁶⁴

On the other hand, there is the interesting case of the *misemono* exhibitions which managed to make a non-processed whale valuable by nature of its being on display. Why were the *misemono* whales made into shows rather than processed? In some cases, such as the Shinagawa stranding in Edo in 1798, they appeared in areas which did not have organized whalers able to claim the whale for their own. But they also appeared in Osaka, with its much stronger merchant ties to the relatively nearby Kumano whaling villages. An early 20th-century account of Edo-period *misemono* lists four major shows including whales: the first was apparently a head and tail of two whales caught in the Edo river in 1734, sold and carried up to the Ryōgoku area for a show; the second was a whale caught in 1766 in the Kumano area and brought to Osaka in one piece; and the last two were in Osaka in 1789 and 1795.⁶⁵ This is not a

64 Arne Kalland, *Fishing Villages in Tokugawa Japan*, (Honolulu: University of Hawaii Press, 1995), p. 183-184, and Morita, *Kujira to hoge no bunkashi*, p. 157-160.

65 Asakura Kamezō, *Misemono kenkyū* (Tokyo: Shun'yōdō, 1928).

comprehensive list, as it includes neither the Shinagawa stranding Gentaku went to visit nor another Osaka showing in 1823 for which an advertisement entitled *Ōkujira no zu* (大鯨之圖) still exists in the Osaka Museum of History. Perhaps the whales brought to Osaka whole for shows were deemed somehow unfit for consumption or processing for oil and bonemeal fertilizer, or perhaps an agent for a show made a point of searching out whales and other curiosities and just happened to be able to offer a high enough price for a specimen that the whalers were willing to sell it whole. Unfortunately, there are very few sources which describe ephemeral *misemono* shows in any great detail, and none explain why whalers might give up a whale just to let it rot on display in the city. The description on the 1823 *misemono* does note that there were six whales in the vicinity between the 22nd day of the first month and the 24th day, presumably the period during which the whale on display was caught. Given the flyer is dated to the second month, the whale was likely quite rotten by the time it made it on display.⁶⁶ Perhaps because half a dozen whales were available at the time, one could be spared for a show in Osaka. The draw of curious crowds may well have been strong enough to make this a lucrative (or seemingly lucrative) proposition. If so, curiosity was an important factor tying the denizens of nearshore waters into the lives of more inland-dwelling people.

This whale *misemono* at Dōtonbori's Hōzenji (法善寺) in 1823 is evidence that people organizing such shows found the presentation of a whale to still be rare or fascinating enough to try including one nearly a hundred years after the first recorded public viewing of whales in Edo. The experience of the actual show is lost to us, but the choice of image on the flyer is still instructive. This advertisement demonstrates the ties between curiosity about whales themselves and curiosity about how people caught them. The central image is not simply of a whale as one

⁶⁶ Anonymous, *Ōkujira no zu (Misemono banduke) Dōtonburi Hōzenji nigatsu*, manuscript no. 歴9833 (Osaka: Osaka Museum of History, 1823).

might see it on display at the temple's *misemono* show. Instead, it is a dynamic illustration of how it was caught in order to be brought to Osaka, with men in boats surrounding the whale to throw harpoons at it, and signallers on shore to coordinate them. It is not a well-researched illustration, since the portion of the whale visible above the water and also the details of the whalers are not particularly realistic, never mind the the fantastical *shachi* fish (generally found on castle roofs to ward off fires) leaping in front of the whale's mouth. A lack of realism is not surprising, since the point of the flyer was to bring people to the show rather than to be a source of detailed scholarly information about either whales or whaling. This advertisement is one piece of evidence for the kind of experience that the general public might have with whales. One of the larger *misemono* events for whales had an even wider influence, since it resulted in two literary works focused on whales written by popular authors.

Whales in the Literary Imagination: Kibyōshi

The Shinagawa whale showing in 1798 seems to have been hugely popular. Its impact can be seen, as mentioned earlier, on the scholars like Gentaku who were curious about whales. But it also clearly influenced the broader cultural imagination. In the year after the stranding, there were *kibyōshi* (黄表紙) published by both Jippensha Ikku (十返舎一九) and Takizawa Bakin (滝沢馬琴) related to whales.⁶⁷ Both of these works provide a fantastical story involving a whale. Ikku's offered more anthropomorphic figures such as a rabbit, monkeys, and a blowfish-woman, while Bakin's presented more of a tall tale flavor, talking about a merchant with an increasingly large head and his infatuation with very large things. What is important about these stories for my purposes is that they brought different ideas of whales to the public who may not

⁶⁷ Jippensha Ikku, *Taigei hōnen no mitsugi* (Edo: Enomotoya Kichibei, 1799), and Takizawa Bakin, *Kujirazashi Shinagawa baori* (Edo: Tsuruya Kiemon, 1799).

have seen whales themselves, tying these impressively large and generally elusive marine animals into the cultural environment of Tokugawa Japan. There was (and still is) something about the idea of whales that fascinated people and made them receptive to stories, songs and pictures about them and about the whalers who caught them, and stories like these two provide some insight into what aspects were particularly interesting to people in early modern Japan.

Although the main title of Ikku's story is *Taigei hōnen no mitsugi* (大鯨豊年貢: Paying tribute in a fruitful year of large whales), the text begins with a brief preface *Shinagawa kujira* (品川鯨: The Shinagawa Whale) that connects it directly to the Shinagawa stranding of the previous year. The story itself is a way of explaining how the whale might have gotten to Shinagawa in an entertaining fashion, and some of its elements show the assumptions that people made about whales and their place in the world. The main character is a monkey who was originally abducted and brought to the Dragon King's Palace under the sea, where members of the court were planning to use his liver to help with a young princess' sickness. But the clever monkey manages to not only escape death, but also steal some of the Dragon King's treasure before fleeing into the blowhole of a whale. The monkey wants to go back to the Kumano mountains he was abducted from, but as he and the whale approach the shore, they are threatened by whalers with harpoons and cannot get close enough for the monkey to go ashore.⁶⁸ Instead, the whale swims into unfamiliar waters and ends up in Shinagawa in Edo, where people walk across his back as if he were a bridge. Then, after some adventures involving the monkey, his stolen treasure, and monsters from the mountains, he and the whale end up bringing riches to Edo in the form of money sprayed out of the whale's blowhole. This is the "paying tribute" from the title. Ikku's story shows how the arrival of a whale in Edo could bring great monetary value,

⁶⁸ Ikku, *Taigei hōnen no mitsugi*, page 4 (reverse) onto page 5.

and also was similar to the journeys that people had to make to Edo to pay their taxes and respects to the shogunate.⁶⁹

The value of the whale in Ikku's story was expressed in showers of gold and silver coins. Real whales' monetary value required a bit of conversion first, so the question is what sort of value would Ikku have been referencing? Whales' value might come from payments to see a stranded whale being shown as a *misemono*, but the inclusion of whalers in the story shows that Ikku also knew whales had value as hunted animals, not just as curiosities. The treasure coming from whales in *Taigei hōnen no mitsugi* is thus most likely a reference to the amount of money earned by managers of whaling groups and the merchants who sold whale products. Ikku's idea of whales presented in this popular comedic work references not just whales as animals or monsters, but also whales as natural resources and bringers of wealth. The awareness of the connection between wealth and whaling originally offered by Saikaku's *Nippon eitaigura* at the end of the seventeenth century clearly was still strong by the end of the eighteenth century.

Bakin's piece, *Kujirazashi Shinagawa baori* (鯨魚尺品革羽織: Whale-scale Shinagawa jacket), provides another perspective on the ways that information about whales percolated from whaling groups into broader society, whether scholarly or otherwise. His story also shows that one should not discount the interest that readers of comic tales might have in more difficult scholarly works like natural history texts. After a short prologue advertising the book, there is foreword written in kambun, a format showing that it is (at least supposedly) scholarly information about whales.⁷⁰ This quick summary defines whales as "large fish in the ocean", then gives the names for male and female whales, as well as different names used for whale in the past. He cites reference works that talk about whales, with the best one noted as the traditional

⁶⁹ Ibid.

⁷⁰ Bakin, *Kujirazashi Shinagawa baori*: page 1 is the advertisement, then the reverse of page 1 is the kambun prologue.

Chinese materia medica reference work *Bencao gangmu* (in Japanese, *Honzō komoku*). This section is very brief and mostly correct, although as noted earlier, the *Bencao gangmu* did not have extensive information about whales. The humor here arises more from the contrast between this section and the ones that follow, after the kambun essay has set up the idea that this will be a proper scholarly work. There is then a sudden shift in tone in the brief explanatory sections that follow, as Bakin stretches the classification of whales far beyond accepted classificatory boundaries. The fact that the reader is expected to recognize this format is indicative of the penetration of natural history texts into circles beyond *honzōgaku* scholars.

The four single-page segments that follow the first section talk about different interpretations of "whales" which are not actually whales at all. The first one is for *yamakujira*, which literally means "mountain whale," but more colloquially referred to wild game meat, particularly boar (see Chapter 2).⁷¹ Bakin makes the description sound as if the boar in the image is supposed to truly be a whale type. The parallel to whales includes a reference to a case where someone who harpooned one made seven villages profit: while this was a common saying about whales, it is far less likely to be true for one single boar. The next segment is for something called *namekujira* (なめくじら), which is a pun on *namekuji* (蛞蝓), the slugs shown in the accompanying image. Since whale names were generally of the form (description)-*kujira*, adding a *ra* to the word slug makes it sound much like *semikujira* (right whale), *zatōkujira* (humpback whale), and other real whale names. The layered reference to these slug-whales includes the fact that they are supposedly vanquished by "rain-harpoons".⁷² Then, the next page introduces a *goshō kujira* (後生くじら), depicting an old man crouched down on bedding with his jacket

71 Ibid., page 2. The comparison of boars to whales is not specific to Bakin. There is a similar illustration of a boar cresting waves in Katsushika Hokusai, *Hokusai manga*, volume 14 (Nagoya: Katano Tōshirō, 1878), p 22 (reverse) and 23 (digital p 25 in the National Diet Library; <http://dl.ndl.go.jp/info:ndljp/pid/851659>). For a discussion of the proverb about whales, see Chapter 2.

72 Ibid., page 2 reverse.

making him look like a whale's back. The rest of the description leans more heavily on the old man part than the whale part, talking about how terribly diseased and lecherous he is.⁷³ Finally, Bakin introduces the *mimikujira* (みみくじら), or ear-whale, which references a poorly-made article like a sword or knife hilt with a profile vaguely resembling a whale.⁷⁴ Only after these short pieces does Bakin turn to the longest and central story. The main story is about a harpooner who made a living hunting whales, and therefore wanted to make himself and everything he owned large, just like the whales he hunted.

This quick look at the different ways that the Shinagawa whale inspired comic writers shows the multifaceted nature of the popular knowledge upon which both authors relied for their stories' humor. By looking at these stories, we can infer something about what people thought should be linked to whales. Bakin's *kambun* section shows that whales were seen in the framework of scholarly classification even by readers who were not necessarily natural history or medical scholars themselves. Just as Gentaku went to see the whale in Shinagawa along with other *misemono* audience members, members of the reading public could be expected to fit those sideshow whales at least partly into the context of Chinese-inspired writing. But the other parts of these stories show that ideas about whales were not limited just to the philosophical realm. The treatment of wild boars in a description as if they are really "mountain whales," especially juxtaposed with the following section describing slug-whales based on wordplay of the names of both creatures, shows the ways that people categorized animals for more than just essential philosophical definitions of the universe. The classification of animals and other parts of nature could be used as play, as well as for serious scholarly pursuit.

73 Ibid., page 3.

74 Ibid., page 3 reverse.

Conclusion: The Many Forms of Metaphysical Whales

There were many influences on ways that whales were envisioned in early modern Japan. Science was one, in the form of both the developing Japanese natural history of *honzōgaku* and the later *hakubutsugaku* influenced by Western Linnean categorization methods. Medicine was closely tied to that science, both in the understanding from Chinese materia medica in *honzōgaku* and in the influence of Western anatomy. But more frivolous forms of metaphysical whale also existed, as authors used whales in comic stories and other forms of writing. Even personal encounters from sideshow monster displays influenced the imagination of whales by the way they were presented out of their natural element. These different views of whales were not mutually exclusive. Instead, they were interconnected and overlapped to varying degrees. One of the important aspects of this melding of different viewpoints in peoples' imagination of whales was the way that this information travelled. The different interpretations of whales described in this chapter all serve to show how the marine environment was a part of the general consciousness of the people of early modern Japan, no matter how far they lived from the shore. Entire whales were not always physically confined to the coastal areas where they were hunted, as their infrequent appearance as *misemono* shows. But even if they had been physically present only in the ocean near shore, written descriptions and images of whales had the capability of travelling much farther. The many text and illustrated versions of whales, at all levels of accuracy or realism, made marine space part of the lives of people all over Japan.

The conceptualization of whales shown in these sources is just one example of how people were beginning to understand the natural world through observation and personal experience. The thriving print culture of the period and increasing travel combined to popularize texts that described strange and distant places, including the curious animals, plants, and other

things that might be found there.⁷⁵ Illustrations helped make these descriptions of things a reader had never seen become more real. For example, in an 1851 preface to Andō Hiroshige's (安藤広重) "東海道五十三次 (53 Stations of the Tōkaidō)" woodblock print series, Ryūkatei Tanekazu (柳下亭種員) exclaimed, "Looking at these pictures is even greater pleasure than travel itself! Those who have never travelled will find instruction [in these pages] while those who have visited these places will be vividly reminded of them and their associations."⁷⁶ Sometimes personal experience could be obtained when specimens appeared in shows in the major cities, in *bussankai* for natural history and other collections and in *misemono* for the truly bizarre sideshow monsters (although such things could also be part of an exhibit of a natural history scholar's collection). In the same way that new interest in places in the far north arose with works like Suzuki Bokushi's *Hokuetsu seppu* (鈴木牧之, 北越雪譜: Snow Country Tales), which introduced people to the ways of life in an environment very different from the major cities of Japan, the coastal waters and their strange inhabitants were generally easier to visit in texts than they were in person.⁷⁷ Thus, with these kinds of descriptions and images of fascinating creatures, like the exotically large whales and other strange fish that tended to be included on picture scrolls with them, the marine world was in reach of everyday people. It was also an important part of scholarly conceptions of the natural world and resources available in early modern Japan, because many new resources came from the maritime realm.

Although much of the connection between *honzōgaku* and the classification of whales likely was prompted by concerns about maximizing resources, the use to which people put these

75 See Harold Bolitho, "Travelers' Tales: Three Eighteenth-Century Travel Journals," *Harvard Journal of Asiatic Studies* 50:2 (1990): 485-504, for a description of the importance of travel and the kinds of publications that arose from it during the early modern period.

76 Translation of the Preface to Vol I of the 53 Stations of the Tōkaidō prints is provided by Edward F. Strange, *The Colour-Prints of Hiroshige*, chapter 5 (no page numbers given on web version; p 52 or 3 of the Dover edition, most likely) http://www.hiroshige.org.uk/hiroshige/strange/chapter_05.htm.

77 Suzuki Bokushi, *Snow Country Tales: Life in the Other Japan*, trans. Jeffrey Hunter and Rose Lesser (New York: Weatherhill, 1986).

works need not have mirrored the reason why they were written. The fact that popular authors such as Saikaku, Ikku and Bakin all wrote about whales using information that appeared in more scholarly works shows that their contents could be interesting to a wide audience. Even though *Geishikō* was written by a Confucian scholar concerned with the problems of coastal defense, whale anatomy drawings were included due to Gentaku's interest in Western anatomical and natural history books, and certainly there is a broad enough variety of descriptions of things related to whales in that work to appeal to a number of different readers. Just as the whaling groups all along the coasts of southern Japan were part of an interconnected network of expertise, information about whales was part of an interconnected set of scrolls, manuscripts and books whose contents were copied and recopied in different areas, and influencing popular stories as well as descriptions of how strange creatures like whales fit into the natural order.

We can trace intangible ideas about whales making their way inshore by following their images and descriptions on scrolls and in books and manuscripts, but there is another way in which the non-physical version of whales was important. The descriptions of whales in this chapter were all ways to bring a representation of the physical reality of whales into places where the actual whale could not survive. Some of those representations paralleled the ways that people were starting to look in new ways at the usually invisible interior of human bodies. While it is still unclear why whale anatomical illustrations are the only ones to appear with human anatomy drawings during this period, these illustrations may well have been prompted by more than just the experience of whaling groups dismembering whales into component parts. Perhaps they come in part from a consciousness of whales fitting close to humans in the natural order, something which seems quite peculiar from a modern perspective, where there are other mammals considered much more closely-related to human than any of the Cetacea are. In the

next chapter, I will introduce another way in which the immaterial whale came ashore, and discuss how whale spirits shared some of the characteristics of human souls in the religious environment of early modern Japan.

Chapter 4

Whale Graves and Whale Spirits: The Religious Place of Whales

In the temple death register held by Kōganji (高岩寺) in Kayoi village (part of modern Nagato city, Yamaguchi Prefecture) there are 243 posthumous Buddhist names listed, such as Kanyo myōhaku (寒譽妙白), an individual who died in March of 1807.¹ The second character of this name (*yo* 譽) is one commonly given to people who have gone through a five-day training in the temple; it would seem to indicate a person who had come to the temple for some Buddhist training even if they were not highly devout. But this name, along with every other one recorded in this register, belongs to a whale. Why were these whales treated so much like humans after their deaths? In Western, Christian-influenced philosophy, there is usually a strong dividing line between human and nonhuman; humans are thought to be the favored beings of God and the only ones with souls. But from a Buddhist perspective, all beings have souls, even if they exist on a hierarchy which generally places animals lower than humans. If this practice of providing posthumous names was merely an indication of Buddhist concern for the souls of all beings, why is the death register specifically for whales?

In fact, the whales' death register is not the only way that cetacean deaths are commemorated in Kayoi. One of the best-known whale graves today is also in Kayoi (Figure 4.1). The whale grave was erected in 1692 on the grounds of the Kannon temple (観音堂) known as the Seigetsuan (清月庵), with 75 whales' remains buried there. The location is quite near to the main area of Kōganji temple, where the three volumes of family death registers (*kakochō* 過去帳) listing the posthumous names of whales caught between 1719 and 1837 are kept, and

¹ There is no pronunciation recorded in this kakocho for the names given, so I have chosen one of the possible combinations of *on* readings, but it could also be pronounced Sayo/Sanyo myōshiro/myōbyaku.



Figure 4.1: The whale grave at Seianji in Kayoi, Nagato City, Yamaguchi Prefecture. Photograph by author.

where priests continue to hold yearly services for the spirits of these whales.² The names of the net whaling group captains and the village headman for Kayoi in 1692 are carved on the grave as sponsors, but the fifth head priest of Kōganji, Sanyo Shōnin (讃誉上人), was the main instigator (or at least promoter) of both the grave and the memorial services attached to the death register honoring whales.³ Upon his retirement to Seigetsuan in 1679, he built an altar to Kannon and began conducting memorial services for whales, preaching the need to commemorate whale spirits until, 13 years later, the whale grave was finally erected.⁴

The main purpose of this whale grave is to honor the calves taken from inside pregnant whales, animals that the whalers captured without knowing they were killing two whales instead of one. As the inscription on the grave notes, the fetuses would not be able to live even if released back into the water. Thus, the whalers hoped that the spirits of unborn whales whose lives were cut short could become Buddhas by giving them respectful burial and holding yearly prayer services for them, rather than rendering them down as was done for adult whales.⁵ Even if the inscription did not make it clear that the grave focused on calves, whalers in Kayoi caught far more than the 75 whales whose remains are buried at the grave. Of course, if they buried all of the whales they caught it would negate the purpose of hunting them in the first place; this is not a case of someone deciding that any whale killed by someone from Kayoi should be given a

2 For examples of the ways that this temple and its whale-related practices are described, see Yamamoto Tōru, "Kumano no kujira meguri," *Kumanoshi* 56 (2009) and Tokumi Mitsuzō, *Chōshū hōgei kō* (Yamaguchi-ken Shimonoseki-shi: Kanmon Mingeikai, 1957).

3 Kumi Kato, "Prayers for the Whales: Spirituality and Ethics of a Former Whaling Community - Intangible Cultural Heritage for Sustainability," *International Journal of Cultural Property* 14 (2007) gives the name as Shoyo, but the official Nagato City website article on Kayoi's whale prayers (<http://www.city.nagato.yamaguchi.jp/sys/photo/detail.php?detailID=1027>) glosses the name as Sanyo, which fits with the usual pronunciation of the first character in 讃誉.

4 Kato, "Prayers for the Whales," p 296 and Nakamura Ikuo, *Nihonjin no shūkyō to dōbutsukan: sesshū to nikujiki* (Tokyo: Yoshikawa Kōbunkan, 2010), p 69.

5 A discussion of the meaning of the inscription can be found in Nakamura, *Nihonjin no shūkyō to dōbutsukan*, p 69.

respectful burial. Rather, something about the accidental death of a baby whale that never had a chance to be born was particularly affecting, and resulted in memorialization.

Still, the guilt or remorse attached to killing was not only focused on unintentionally-killed fetuses, because the *kakochō* at Kōganji record around 1000 whales' posthumous Buddhist names.⁶ Furthermore, this project of remembering the dead was not solely the result of Sanyo Shōnin's influence, although clearly he was highly involved with the practice in Kayoi. A memorial erected in Yobuko (in modern Saga Prefecture), one of the prosperous centers of whaling in the Saikai area, has an inscription which notes that it was erected in 1748 by Nakagawa Yoshihei Shigetsugu (中川與四兵衛重次), a member of one of the four families involved in whaling in Yobuko. On the back it notes "10,000 souls [of] whales become Buddhas."⁷ This is likely a reference to all souls of whales killed by whalers, rather than limiting the memorial to unintentionally killed fetuses. There are also *kakochō* for whales in Kongōji (金剛寺) in Ehime Prefecture, Daikyōji (大橋寺) in Oita Prefecture, and Jizōin (地藏院) in Niigata Prefecture, and at least 50 whale graves of different forms throughout the country.⁸ Nakamura Ikuo (中村生雄) notes that "in areas where traditional whaling prospered, almost without exception some sort of memorial (*kuyō* 供養) behavior was performed."⁹

This chapter will look at various examples of spiritual practices dealing with the death of whales, including death registers, memorials and graves, as well as other practices which were more commonly a response to the deaths of humans. In investigating the human characteristics

6 Ibid., 71-72.

7 There are many possible pronunciations for this man's given names; without a gloss on the inscription, I have made my best guess for 中川與四兵衛重次. This monument and its inscriptions are described in Nishiura Shinsuke, "Genkainada de kiita kujira honekiri uta: Sagaken Yobuko, Iki no kujira shiseki to 'Yobuko kujiragumi' no kujira bunka fukyū katsudō," in *Kujirazuka kara mietekuru Nihonjin no kokoro II: Kujira no kioku wo tadotte Saikaiiki e*, ed. Hosokawa Takao (Tokyo: Nōrin Tōkei Shuppansha, 2012), p 5-6.

8 Nakamura, *Nihonjin no shūkyō to dōbutsukan*, page 72 cites Yoshiwara's survey as including 130 graves, but Kato, "Prayers for the Whales," counts only 54, including 9 constructed in the twentieth century. With such a large discrepancy in count, I have chosen to provide the minimum number here.

9 Nakamura, *Nihonjin no shūkyō to dōbutsukan*, p 72.

attributed to whales, I hope to offer insight not just into the interactions between humans and one particular type of animal in the early modern period, but also into the multiple sets of boundaries between humans and other inhabitants of the natural world. This investigation of the place of whales in the metaphysical environment will also show the influence that these marine species had on the spiritual lives of people in early modern Japan.

Death Registers For Whales and Other Animals

The practice of recording the death of individual whales with posthumous Buddhist names in temple death registers (*kakochō*) is probably the most unusual way to commemorate whale deaths. While both death registers and stone memorial or grave markers can note the death of an individual, their purposes are not exactly the same. Temple death registers are tied to the performance of memorial services, whereas the existence of a stone memorial or grave marker does not necessarily imply any further commemoration services. Given their strong ties to commemoration of the stages of a human spirit's journey away from its previous life, it might seem strange that there would be *kakochō* for nonhuman deaths. The practice of giving posthumous names to whales was not confined to Kayoi, even though that is the only place which seems to have kept an entire set of *kakochō* which recorded only whales; the other known examples of whales being named are from temples which have a few whale names mixed in with people's names. This latter type of register is from areas where organized whaling did not take place (especially Ehime and Oita Prefectures). In such places, individual whales or small groups would sometimes become stranded or trapped, after having wandered off usual migration routes. I will discuss the significance of this difference between whaling and non-whaling areas later in the chapter, but the singular nature of the rare encounters with whales in these areas may have

contributed to the desire to treat the individual's death with a higher level of respect and in a similar fashion to individual human deaths.

An interesting comparison can be made to the practice of recording other types of nonhuman deaths. There are a few other examples of nonhuman animals recorded among human names in death registers, but when applied to whales (whether singly or in Kayoi's specialized registers) the practice was slightly different from these rare cases. I have found three examples of other animals in death registers, all of which are domesticated animals: horses, cats, and dogs. The desire to memorialize dead horses comes particularly from the traditionally horse-breeding area of Iwate Prefecture. In this region, horses were important enough to the family to share living space, with stables connected to the interior of the house so that people sitting around the fire in the living room could watch the horses in the stable right next to them. The Pure Land temple at a post station town in Tōno, Iwate Prefecture, recorded names for 40 horses in their *kakochō* between 1704 and 1783. The horses are recognizable by the fact that they all use the character for livestock (*chiku* 畜) in their names, and tend to have a single character followed by *chiku* plus sometimes the phrase *jinsei* (人生: human life) and/or *butsuka* (佛果: become Buddha) at the end. The records also note the year and town where they died, their owner's name, and then "horse" (*uma* 馬) to finish the entry.¹⁰ Presumably, working side-by-side with horses at a busy post town for many years helped make local people feel their horses were individuals deserving of just as much consideration in the afterlife as the people they knew. Even with this desire to respect deceased horses, at the same time the animals were marked by very recognizably horse-specific records in the registers.

Similarly, the few cases of cats and dogs recorded in death registers likely arose from a closeness to the individual animal, much like the love that people in the modern era have for pets

¹⁰ Kirita Miyoshi, *Kakochō: eien ni ikiteiru na no hakken* (Tokyo: Maruzen, 2003), p 137-139.

that leads them to bury them in pet cemeteries (in Japan and elsewhere).¹¹ One example of a *kakochō* listing cats is a register from Shibaku (modern Minatoku) in Tokyo. There are two records which begin with the same 4-character name or phrase, *sokutenchikujo* (即転畜女). The first record, from 1761, follows this with Lord Kojima (小嶋殿) and then the cat's original name, Kaineko (カイ子コ). The second record, from 1785, has only a note that likely indicates the cat was one taken care of by servants or women in the head of the temple's household.¹² In both cases it seems that someone connected to the temple was particularly fond of a cat whose death was then recorded in the register, but there are not enough instances of this type to indicate it was a habit before the modern era to memorialize pets. Nor does there seem to be a particularly personal death-name given to the cats in question, unlike the case for the horses in Iwate.

Another example is also based on exceptional circumstances. The temple Ekōin (回向院) in modern Tokyo's Sumida Ward, was founded after the Meireki fire of 1657, to memorialize the dead from this fire who lacked family members to tend their graves, including the bones of animal victims of the fire. From this exceptional beginning, other instances of animal memorialization followed, including a reference to a burial of six hundred cats that died in an epidemic, and eleven individual animals recorded in Ekōin's death registers between 1836 and 1852.¹³ The supposition that pets were only included in temple death registers in rare circumstances is supported by a dog's posthumous record in another temple in Shizuoka Prefecture. An old monk from this temple remembers that, in the early Meiji period, there used to be a childless couple who loved their dog like a child, and convinced the head of the temple to perform memorial services (*kuyō*), erect a stone memorial, and also to record the posthumous

11 For a detailed examination of the modern practice of pet cemeteries in Japan, see Barbara Ambros, *Bones of Contention: Animals and Religion in Contemporary Japan* (Honolulu: University of Hawaii Press, 2012).

12 It is also possible the first record is indicating a pet cat (kaineko) named Lord Kojima. Kirita, *Kakochō*, p 140.

13 Ambros, *Bones of Contention*, p 65 and 105-107.

name of Shōtenkenji (昇天犬子) in the temple's *kakochō*. However, this appears to have been a very irregular case, since the next head of the temple did not approve of this practice and the name was erased from the register.¹⁴

The practice of recording posthumous names for whales differs from these few examples of other nonhuman animal names, in part because the register specifically for whales provides in itself far more examples of the practice than can be found for other nonhuman animals. But it is also true that encounters with whales were not the same as with domestic animals. While whalers did meet the whales they killed in a very up close and personal fashion, they certainly did not live with them over extended periods of time or come to know their personalities. Nor did they have the opportunity to feel like whales were members of the same household, as was possible for horses, dogs, and cats. While one might expect some blurring of boundaries between humans and domestic animals living closely with people, as Barbara Ambros shows in her study of pet memorials in the modern era, the rationale behind whales occupying a liminal space between humans and other animals is less clear. Ambros links the rise of animal memorials in Japan to specific economic and social shifts: whale memorials increasing with the rise of a whaling industry, modern zoo memorials increasing as a way to draw in a dwindling audience of children, and pet memorials at first being restricted to the rich with money to spare in the Edo period, and only rising to real popularity in the 1980s with the shifting demographics of falling birthrates and an aging population.¹⁵ Certainly the memorialization of animals as commodities is a common thread during this period, and it is interesting that animals could be framed as resources for human use even while their spiritual existence on a continuum with humans was recognized. But the question still remains, why did people feel the need to provide whales with human-style

¹⁴ Kirita, *Kakochō*, p 140.

¹⁵ Ambros, *Bones of Contention*, p 88-89.

memorials upon their deaths? How did people balance their use as resources with the recognition of their spiritual existence? Finally, what was it about whales and not other non-domestic animals that made them seem like individuals whose souls should be commemorated even when people had very little contact with them while they were alive?

Memorializing Nonhuman Spirits: Kuyō

Memorials for nonhuman spirits were not confined to whales. The practice of constructing human graves with stone markers began in the Edo period, around the 1650s or so. Thus, the earliest known whale grave (from 1671 in Mie Prefecture) followed not long after the construction of human graves in the same style.¹⁶ In cases where it is not clear that "grave" is a proper term to use, there being no body or body parts buried under the marker, the stone towers raised to mark a death or deaths are often referred to as *kuyō* (memorial) towers. The term *kuyō* is a very general one, and can be applied to services for humans or whales or even birds, insects or plants.¹⁷ Such memorials are not always focused on the death of whatever they memorialize, as for example in the case of the *kuyō* tower raised to commemorate all of the insects hunted for pets in Edo-period Chōsei (in modern Chiba prefecture). This memorial was raised in the 1920s in response to the decline in keeping singing insects in cages with the concomitant rise of radio, and is a generic remembrance of insects rather than specifically focused on what might have caused their deaths.¹⁸ So just the simple existence of a memorial for dead whale(s) does not

16 For trends in human graves, see Nam-Lin Hur, *Death and Social Order in Tokugawa Japan : Buddhism, Anti-Christianity, and the Danka System*, Harvard East Asian Monographs (Cambridge, MA: Harvard University Press, 2007), p 197-198. There is a table showing the dates of known whale graves on p 40 of Kiyomizu Seishi, "Kujira no haka • gyokai no kuyōhi wo tazunete - hōgei • kujira shokubunka kara shuchō," *Wakayama chiri* 20 (2000): 37-46.

17 As discussed in Matsuzaki Kenzō, *Gendai kuyō ronkō : hito, mono, dō-shokubutsu no irei* (Tokyo: Keiyūsha, 2004), with a summary of different kinds of *kuyō* on pages 103-104.

18 Tanikawa Tsutomu, "A Monument of Scarified [sic] Insects in Chosei Village, Chiba Prefecture," *The Japanese Journal of Pestology* 24, no. 1 (2009).

provide enough evidence to understand how whale spirits fit into the lives of the people who created it.

As with whale graves, the other nonhuman graves or *kuyō* towers which were constructed in the Edo period tended to be for species which had proven useful to humans. This was generally an economic usefulness, for animals which could be hunted or harvested, such as the herring whose capture was a major industry in Ezo (Hokkaido) and for which there was a memorial tower built in 1757. There were even memorial towers built for wild-harvested plants as well as animals and birds: the earliest known example (carved with the label *sōmoku kuyō tō* 草木供養塔), was built in 1780 in Yamagata Prefecture by people whose livelihood was derived from logging. Even today nearly 70% of these plant monuments are located in Yamagata.¹⁹ Graves for animals which worked closely with people, such as horses or dogs, did not tend to be erected until the modern era. This is further evidence for the distinction between recording a death in a *kakochō* and building a memorial or grave for the deceased, although in the unusual case of the favored family dog mentioned above, both practices were followed. There is one exception to this tendency to focus on non-domestic animals: a very early grave for war horses which had been part of a massive winter die-off in Yamaguchi in 1555. However, the forest planted on top of the mass grave to commemorate this event is not the same kind of memorial as the stone monuments that began to appear in the Edo period. The next known horse grave does not appear until one built in Shibuya, Tokyo, marking the warhorses lost in the Sino-Japanese war in 1894-5.²⁰ Thus, whale graves appear to have been an early expression of an increasing tendency to include the spirits of nonhuman animals and plants in the same kinds of Buddhist death ceremonies and memorial markers that were developing for humans during the Edo period.

¹⁹ Matsuzaki, *Gendai kuyō ronkō*, p 103-104 and Nakamura Ikuo, *Saishi to kugi: Nihonjin no shizenkan • dōbutsukan* (Kyoto: Hōzōkan, 2001), p 236; monument numbers from Kato, "Prayers for the Whales," p 289.

²⁰ Daimaru Hideshi, "Dōbutsu no ohaka," accessed December 30, 2011.

As the use of memorials for trees harvested by loggers shows, the types of spirit which might be commemorated or placated was not confined to animals which could be thought of as possessing human-like souls or spirits. This is quite reasonable within the Buddhist framework, where all living things are on a continuum of being and can be reincarnated into different forms within that continuum. Memorials have been built for beings as different from humans as insects, the oldest known insect grave having been built in 1837 in Kohama, Fukui Prefecture.²¹ Because singing insects were often kept in cages during the Edo period, graves such as these were likely to have commemorated insects which were something like pets rather than the types of insects that functioned as pests in the household or fields, as in the twentieth-century example mentioned earlier of Chōsei village, Chiba Prefecture.²² Household pets have been treated with human-style death memorials beginning much more recently than the commemorations for more useful animals. This difference serves to show how similarity in experience and closeness to human families was *not* part of the earlier tendency to memorialize nonhuman dead. But at the same time, the shifting focus of memorials' objects does not necessarily draw a solid boundary between human and nonhuman spirits even in the modern era, when the greater influence of Western thought might suggest that this dichotomy should hold more weight.

Death memorials eventually came to include things that would normally be considered completely inanimate, for example with the practice of *hari kuyō* (針供養) or memorializing needles. The expansion of *kuyō* targets into inanimate objects is another aspect of the expansion of *kuyō* to include pets and other animals, as well as the rise of *mizuko kuyō* (水子供養) which I will consider again later in this chapter.²³ As with the case of the economically-driven memorials mentioned earlier, *kuyō* for inanimate household objects are founded on a feeling of connection,

21 Tanikawa, "A Monument of Scarified Insects in Chosei Village, Chiba Prefecture," p 23.

22 Ibid., p 24.

23 Matsuzaki, *Gendai kuyō ronkō*.

obligation, and gratitude towards the objects which have been used closely by the people carrying out the rite.²⁴ While ceremonies for objects such as fans and eyeglasses have developed in the modern era, generally by professional associations after World War II during the rapid growth period, the earliest object-based *kuyō* appeared in the Edo period for needles and writing brushes.²⁵ Angelika Kretschmer argues that the existence of many more instances of *kuyō* for inanimate objects than for plants, which are living organisms at least, shows the importance of human investment in something, whether object or plant or animal, to the rise of *kuyō* for it. As she notes, "it is perhaps not the buddha-nature of plants, but the human-nature of the objects that inspires the performance of kuyo rites."²⁶ This anthropocentric perspective would help explain why in the Edo period the nonhuman *kuyō* - for whales, herring, or trees - were performed in areas where people relied on their harvest (and thus death). It also may explain why it took longer to develop *kuyō* for household pets, which people could be close to but did not necessarily rely on in the same way. People may also have had a greater fear of retribution from the spirits of animals and objects that were exploited rather than cherished as part of the family. Kretschmer's analysis of the motivations behind *hari kuyō* suggests they might have included such a fear, hearkening back to early needles made of fish bones, where their disposal may have shared the desire for placating vengeful animal spirits.²⁷ However, we need not look for an original source in a living being to understand why people might wish to show thankfulness and apology towards objects or beings that they relied upon in their everyday lives but then discarded.

24 Angelika Kretschmer, "Mortuary Rites for Inanimate Objects: The Case of *hari kuyō*," *Japanese Journal of Religious Studies* 27, no. 3/4, Mortuary Rites in Japan (2000), p 380.

25 Ibid., p 382

26 Ibid., p 384

27 Ibid., p 402

Variation in the Forms of Memorials

Not all *kuyō* are marked with the stone memorial towers that those for whales tend to have. In some cases, the process of conducting a religious commemoration for something's death was not marked by any kind of monument still visible today. It is possible that there were practices commemorating whale death that likewise were less lasting than stone monuments. For example, the insect *kuyō* ceremony on the Chita peninsula involves taking a hanging scroll with an image of Amida through the village, and another version of this practice in the Agui valley has the scroll hung in a specially-built display hut that the villagers visit to keep from being attacked by insects.²⁸ Memorial mounds for bears were built by hunters in early modern Kyushu, the earliest example being from the 1730s. However, this earliest memorial appears to be linked specifically to an epidemic in the village after they killed a pregnant bear that had been frequenting village territory, and further memorials did not appear until the early nineteenth century.²⁹

Whatever their form, memorials were not constructed evenly throughout the period: there was a peak in the number of monuments erected for whales during both the Genroku era (1688-1703) and during the latter half of the nineteenth century. Although general trends in the institution of *kuyō* over time must also be considered, the increase in monument construction in the Genroku period may be related to a transition to the more efficient net whaling methods which occurred around that time. This transition was prompted, at least in part, by a need to shift to new whale species as the favored right whale populations declined under pressure from harpoon whaling (see Chapter 1). On the other hand, Tokugawa Tsunayoshi (徳川綱吉) was shogun during the Genroku period, so it is possible that the higher number of monuments then is

28 These insect *kuyō* practices are described in Sakamoto Kaname, "A Study Of "Dainenbutsu" In the Chita Peninsula," *Tōkyō Kaisei Gakuin Tsukuba Joshi Daigaku kiyō* 4 (2000).

29 Ambros, *Bones of Contention*, p 57.

evidence that the Laws of Compassion had some effect in promoting sentiment towards dead animals, despite the exception for professional animal killers such as hunters and fishermen in the laws (discussed below). This period was also a time of great wealth and cultural development, so this increase in monuments could have come less from the changing practices of whalers or from the influence of the Laws of Compassion, and more from the greater availability of cash and desire to show it off by spending it on publicly visible projects such as monument construction.³⁰ The peak in the nineteenth century is likely be related to the massive decline in Pacific whale stocks and thus much more variable success of whaling at that time. While whale *kuyō* monuments usually mark the date of their construction, they are generally less forthcoming about the exact motivations behind the desire to honor dead whales, so the relative influence of any of these factors is difficult to determine.

Particular local circumstances could influence the timing or form of the memorial that was built, adding to variations in memorials. Along with the example in Kayoi of a single monk pushing for the construction of a memorial, there is the case of the lantern-shape memorial at Ryūshōin (龍昌院) on Ishigami mountain in Yobuko. This memorial's inscription of "1,000 whales *kuyō* tower" marks the point at which the Nakao (中尾) whaling group killed their thousandth whale, placing the memorial at the temple which had, four generations earlier, been reconstructed with the proceeds from whaling provided by the earlier head of the group.³¹ In some cases, the association of a shrine or memorial with whales did not originally spring from their deaths. In the Gotō Islands, there was a shrine built in the early Edo period in Arikawa called Kaidōjinja (海童神社), whose purpose was to placate the dragon lord of the sea after

30 Trends in memorial construction are discussed, for example, by Miyawaki Kazuto and Hosokawa Takao, *Kujirazuka kara mietekuru Nihonjin no kokoro: Bungo suidōkaiiki no kujira no kioku wo tadotte* (Tokyo: Norin Tōkei Shuppansha, 2008), p 123-135 and Nakazono Shigeo and Yasunaga Hiroshi, *Kujiratori emonogatari* (Fukuoka-shi: Gen Shobō, 2009), p 160-163.

31 Nishiura, "Genkainada de kiita kujira honekiri uta," p 8.

many men had been lost in accidents on the water. The shrine was built on a round hill which looks like a whale, and the Arikawa-based whaling group prayed for protection from this god, but that does not make the shrine a memorial to the death of whales in particular. It was not until the whalebone gate was built in 1958 by a modern harpoon-gunner from Arikawa that the shrine came to have any association with memorializing the death of whales in particular (Figure 4.2).³²



Figure 4.2: Entry to the Kaidōjinja, Arikawa, Nagasaki Prefecture, including a gate made from fin whale jawbones erected behind the main torii in 1958. Photograph by author.

32 Tsuji Taiga, "Kaijō ippai ni hibiki wattata hazashi taiko: Nagasaki-ken Shinjō Gotō-chō Arikawa no geishi ato to zenkoku kujira forum," in *Kujirazuka kara mietekuru Nihonjin no kokoro II: Kujira no kioku wo tadotte Saikaiiki e*, ed. Hosokawa Takao (Tokyo: Nōrin Tōkei Shuppansha, 2012), p 66.

For the memorials which do not include helpful commemorative carvings, it is harder to tell what drove the people contributing to their construction. But in some cases, the form of the memorial itself is a clue. In the graveyard in Kayoi, there is another stone which marks prayers for whales and fish, in the form of a Jizō (地蔵) statue, a bodhisattva who is supposed to offer mercy to the suffering and who tends to be associated with the death of the unborn and those who die young (Figure 4.3). This is an unusual form for a whale memorial to take, as most are typically simple stone towers, and it is interesting that it is separate from the memorial to unborn fetuses (which is in the more common shape of a simple four-sided stone tower). One might expect a strong tie between concern for unborn whales and the child-protecting Jizō. Kato says that the Kayoi Jizō statute is one of only two in Japan, erected in 1863 by the head of one of the major local whaling groups, the Hayakawa (早川), when the decline in Pacific right whale populations led to no right whales taken after 1860.³³ The other well-known Jizō whale grave is from Ogawajima, Saga Prefecture, built in 1863 for a fetal whale.³⁴ However, other sources indicate a greater variety of locations where Jizō is associated with whale memorials, so it is not just a unique characteristic of the Kayoi temple, or of only a few whaling groups' history. The extensive list of whale graves and monuments collected by Araki Kimitoshi includes a whale grave in a Jizō temple in Kanagawa Prefecture from 1835, a grave from 1809 in Ikata, Ehime Prefecture which, while now destroyed, seems to have been one of six Jizō statues there, and at least two other whale memorials associated with Jizō of unknown dates.³⁵ Whalers accidentally but relatively regularly killed pregnant female whales, since it is not readily apparent when a

33 Kato, "Prayers for the Whales," p 299.

34 Daimaru, "Dōbutsu no ohaka", <http://www.asahi-net.or.jp/~rn2h-dimr/ohaka2/index.html>, accessed June 2, 2012. This Jizō statue is also mentioned in Nishiura, "Genkainada de kiita kujira honekiri uta," p 21, where it is described as a memorial for a whale fetus specifically.

35 Araki Kimitoshi, "Kujira bunka: kujira wo tomuratta kujirahaka, kujirazuka nado," <http://www.geocities.jp/tibakuzira98/kujirahaka.html>, accessed June 2, 2012.



Figure 4.3: Jizō statue marking a grave at Kōganji, Kayoi, Yamaguchi Prefecture. It was erected in 1863 during the decline of whale populations in the Pacific and commemorates dead whales and fish. Photograph by the author.

whale is pregnant. However, Jizō statues for whale fetuses in places like Ehime, where organized whaling was not practiced, may indicate that regular contact with dead whale fetuses was not required to make the connection to deceased human fetuses or infants.

This link to Jizō is important because of its tie to the modern practice of *mizuko kuyō* and what that might say about the status of whale fetuses in relation to human ones. William LaFleur argues that the child-centered cult of Jizō which had developed over the medieval period was linked to "deep anxieties about the increasingly common practices of abortion and infanticide," both by representing the savior of lost children (whether lost through intentional death or otherwise) and also by providing an avenue through which the retribution or revenge of the dead upon the living, *tatari* (祟), could be averted.³⁶ Buddhism's focus on compassion dovetailed with the idea of easing the pain of the suffering dead. Because suffering led the dead to desire vengeance, prayers to Jizō could turn away this vengeance by helping dead children and fetuses to cross the river to the spiritual realm where they could be reborn. LaFleur posits that, for simple stillbirths and death from childhood illness, parents could still feel guilt about not being able to help their child onto a better rebirth, but the guilt and possible vengeance would be much worse if they had a hand in sending the child or fetus there through infanticide or abortion.

However, this guilt over killing a being that did not have a chance to become fully human did not give rise to the *mizuko kuyō* rites until late in the twentieth century. Helen Hardacre argues that the miracle tales showing Jizō as a protector of dead children which became popular in the Edo period did not characterize these dead as vengeful spirits, and rarely specifically referred to aborted fetuses. In fact, fetuses were not treated the same as adults as far as funeral rites and memorials are concerned - their label as *mizuko* indicated their state of fluidity, where

³⁶ William R. LaFleur, *Liquid Life: Abortion and Buddhism in Japan* (Princeton, NJ: Princeton University Press, 1992), p 51.

they were not quite in the world and thus could be sent back to the cycle of rebirth more easily than a fully realized older child or adult could. In contrast to the funeral rites given to adults, the idea for *mizuko* was to send them back without burdens and let them try again to be born.³⁷ Practices such as posthumous Buddhist names and marked graves were for people who were going on to become Buddhas, not for those who were supposed to be reborn into human lives. Whale fetuses in Kayoi were buried with a marker indicating the desire for them to become Buddhas, but they appear not to have been given posthumous names recorded in the death register at Kōganji as adult whales were, which makes them similar to human *mizuko* but not entirely in the same category. What the link to Jizō shows is that people were concerned about showing compassion towards and protection of dead whales in a similar way to that shown for children. But there was a tension between showing this compassion because it is what a good Buddhist is supposed to do for all fellow beings, and showing this compassion to placate angry dead beings who had been killed in order to support human communities.

The Laws of Compassion and Buddhist Moral Imperatives

One of the most unique forms of early-modern whale memorial remaining today is the bridge made with whale bones on the grounds of the Zen temple Zuikōji (瑞光寺) in Osaka (Figure 4.4). In 1756, the fourth head priest of this temple, Tanjū Chinin (譚住知忍), stayed in the whaling village of Taiji when on a pilgrimage in the Kumano area. While he was there, he was petitioned by the village head Kakuemon (角右衛門) and his relative Jiemon (次右衛門) to pray for the village, which was suffering from not having caught any whales recently. But the priest rejected their request, explaining that there were commandments against killing in

³⁷ Helen Hardacre, *Marketing the Menacing Fetus in Japan* (Berkeley: University of California Press, 1997), p 30-45.



Figure 4.4: The bridge made of whale bones at Zuikōji, Osaka. The original bridge has been rebuilt five times, most recently with fin whale bones in 1975. Photograph by the author.

Buddhism. Kakuemon and Jiemon argued that, without his help, the people of the village would die. At that point the priest agreed that the lesser evil of killing whales would be acceptable for the greater good of keeping the villagers alive. He prayed for them, and a few weeks later the villagers caught some whales. In thanks for their renewed success, the Taiji whalers brought 30 ryō of gold and 18 whale bones to him at Zuikōji, and Chinin used the bones to construct a bridge as a prayer for the whales' happiness in the next world.³⁸

As Chinin explained, Buddhism's strictures against killing and emphasis on compassion should have caused most priests and devout Buddhists to disapprove of the practice of whaling.

38 Tōyama Bunkō, "Yakuyoke kaiun anzan fukutai Zuikōji," ed. Zuikōji (Osaka, 1986).

However, this was a thriving industry even in a period when Buddhism was a strong influence on the government and society, with a complex relationship between religious views of humanity's proper interaction with living things and the practices and beliefs of whalers. Buddhism was supported by the ruling government, especially during the mid-eighteenth-century tenure of the shogun Tokugawa Tsunayoshi, who instituted the Laws of Compassion. However, this does not mean that Buddhist laws and beliefs dictated the behavior of the general populace all that closely, or that they applied equally to all levels of society. Certainly, even outside of government mandates, Buddhism had a strong influence, with somewhere between a third and a half of all books published in the Edo period being on Buddhist topics.³⁹ But how much did the Buddhist ideal of compassion influence whale memorials and graves?

The Laws of Compassion Towards Living Things (*shōrui awaremi no rei* 生類憐令), generally referred to simply as the Laws of Compassion, prohibited various forms of cruelty towards people and animals, based on the Buddhist ideal of compassion. However, a closer look at these laws shows them to be more political than religious in their motivation, or at least in their implementation. The first was promulgated in 1685, but they were revoked after Tsunayoshi's death in 1709. Furthermore, they were never a universal expression of moral viewpoint across the country. They only applied within shogunal territory: while other domains may have followed along with the policy, they were not obliged to do so. They also did not set the tone for views of animals throughout the Edo period, even if one assumes that they successfully mandated compassionate behavior while they were in effect. The continuation of whaling practices during and after the introduction of the Laws of Compassion is thus not particularly surprising.

³⁹ LaFleur, *Liquid Life*, p 71.

The Laws of Compassion are best-known for protection of dogs. While there were certainly provisions for the protection, registration, and care of dogs, the Laws of Compassion also include prohibitions meant to protect hawks, horses, oxen, various food animals from birds to shellfish and fish, and humans needing care (particularly infants and the elderly). From this list, it would seem like whales ought to have been included among the living things which should no longer be killed for food. But there were exceptions for "essential" practices: the abalone and sea cucumbers in the shogun's kitchens were deemed necessary for entertaining the court, and the targets for mountain hunters and other major fisheries were deemed necessary for these professionals' livelihoods and exempt from the laws.

The structure of these laws indicates a focus on the regulation of social roles within the territory controlled by the shogunate, rather than on spreading moral behavior to everyone in Japan. If the Laws of Compassion were solely intended to be focused on improving the behavior of all people along Buddhist lines of compassion for living things, then they would not include exceptions for hunters or fishermen whose work revolved around killing. It is true that the cessation of hawking mandated by these laws removed the possibility of a profession from falconers when they were made to release their tamed hawks back into the wild. However, the laws forbidding fishing applied to regular people of Edo fishing in one of the many rivers in the city, and made an exception for professional fishermen (*ryōshi* 漁師). Likewise, while farmers were not allowed to hunt or kill wild animals, professional hunters (*ryōshi* 獵師) were licensed to carry guns and kill animals.⁴⁰ The difference between the newly-unemployed falconers and the professional hunters or fishermen who could still make a living under the Laws of Compassion

40 Nakazawa Katsuaki, ed. *Rekishi no naka no dōbutsutachi*, vol. 2, Hito to dōbutsu no Nihon shi (Tokyo: Yoshikawa Kōbunkan, 2008) talks about this distinction in general. For a slightly more detailed description of the situation for hunters, see Tsukamoto Manabu, *Shōrui wo meguru seiji: Genroku no fōkuroa*, revised edition (Tokyo: Heibonsha, 1993), p 69-70.

may have arisen from a difference in alternative employment opportunities. Shogunal falconers were re-employed as keepers of the dog pounds built in Edo to provide for the dogs people were no longer allowed to kill. The change in allowable hawking practices was thus related to a reduction in personnel and maintenance costs for the shogunate, although it may also have stemmed from a personal distaste for hawking itself. However much Tsunayoshi did not wish to continue the practice of hawking personally, he did still continue to participate in hawking for the emperor until 1706.⁴¹ Political considerations may have made it difficult for him to cease this practice any sooner, but this still shows that the process of imposing a desire for a certain moral outlook on the populace was not a simple or straightforward one. For other professions which could not be shifted to new work, exceptions were written into the laws.

If the Laws of Compassion did not apply to professional fishermen such as whalers, the introduction of compassion into human behavior towards dead whales may have come more from the recognition of whales' capability for compassion themselves. It was well-known that adult whales (especially mothers) would protect calves, even to the extent that they would remain near an entangled calf trying to free it, and thus be captured themselves by whalers rather than fleeing. Perhaps this direct expression of compassion towards the very young helped people to see whales as more humanlike and led to human-style memorials. If one of the virtues of proper Buddhists is compassion, then whales showed with their compassionate behavior that they too were virtuous and perhaps close to humans on the hierarchy of beings. Before considering this point more carefully, I want to turn next to one of the other ways in which whales could appear to be humanlike, in spirit if not in corporeal form: their appearance in dreams.

41 Nakazawa, ed. *Rekishi no naka no dōbutsutachi*; Tsukamoto, *Shōrui wo meguru seiji*.

Dreaming of Whales and Other Spirits

The inscriptions on whale graves are often not extensive enough to fully explain the motivations behind their construction. Legends related to whales may help illuminate the attitudes held by people in different areas of Japan towards whales' spirits, and how much these spirits were thought to resemble humans. The way in which locals tended to interact with whales influenced the stories where a whale spirit appeared in someone's dream. In his discussion of attitudes towards whale spirits, Akimichi Tomoya (秋道智弥) notes that in Kaga domain (Ishikawa-gun, Kanaiwa) the locals referred to whales as 'lords of the open sea' (*oki no tonosama* 沖の殿様) and held them in awe or dread, with some people praying to escape from harm when they saw whales. On the other hand, people living in areas where whales tended to strand on the beach and thus bring in a windfall of food often thought of whales as an incarnation of Ebisu (恵比寿), god of fishing, and honored them.⁴² Dreams with whales in them could have good or bad results depending on circumstances, particularly whether or not the warning in the dream was heeded. These dreams could come to members of the whaling group, or to others unaffiliated with the group such as local priests. Villages could be cursed when either a mother whale with her offspring or a pregnant whale appeared in someone's dream, if the dreamer (or the whalers he told the dream to) did not listen to her plea. On the other hand, one example from Kayoi tells how a wealthy member of the whaling group's management dreamt of a whale during a period when they had not been able to catch any, and the mother bringing along her calf begged for forbearance as they swam through the open sea near Kayoi. In return, she promised to swim into their nets on her way back, presumably after her calf had grown enough to be left on its own.⁴³

42 Akimichi Tomoya, *Kujira wa dare no mono ka*, Chikuma Shinsho 760 (Tokyo: Chikuma Shobō, 2009), p 111.

43 Ibid., p 112.

Perhaps because whales have regular migration routes along both the Japan Sea and Pacific coasts of Japan, legends about not capturing whales often frame the whale's movement as a pilgrimage (to Ise Shrine, for example), where the prohibition on taking the whale passing by the first time is thus related to allowing them to complete their pilgrimage before hunting them.⁴⁴ Akimichi gives one example of a dream-legend with this rationale, where the mother whale explained that she had a difficult delivery and was going to visit Ōhibi's temple, and thus asked to be captured on her way back rather than before she completed her pilgrimage.⁴⁵ Local historian Yamamoto Tōru (山本徹) explains that a shrine currently located up a mountain in Shiroura, Kihokuchō, Mie Prefecture, was moved from its original location on Ōjiro beach after angry whales sent a fierce storm that caused it to float away. These two whales (he describes them as "married", so presumably they were thought of as a male and female whale) were headed for Ise on pilgrimage, and told the priest at Ōjiro shrine (大白神社) that they wished to pass safely. The local fishermen failed to listen to the priest and chased the whales, who were injured but escaped. After the storm that was seen as their retribution, the shrine was rebuilt out of their reach up on the mountain.⁴⁶

Such legends generally claim that an accidental death or similar sort of misfortune fell upon the families that ignored warnings or promises made to whale spirits in their dreams and went ahead to hunt the next whale they could find. Sometimes the anger of unheeded whales would manifest directly, as whales that overturned or destroyed whalers' boats.⁴⁷ The storm that washed away Ōjiro shrine is a slightly more indirect version of a whale attack. At other times the curse would appear as a disease in the village or a famine, which might be mitigated by placating

44 Matsuzaki, *Gendai kuyō ronkō*, p 94.

45 Akimichi, *Kujira wa dare no mono ka*, p 112.

46 Yamamoto, "Kumano no kujira meguri."

47 Akimichi, *Kujira wa dare no mono ka*, p 112.

the whale's anger by instituting memorial services (*kuyō*).⁴⁸ This is given as the reason for constructing the monument at Jōrinji (常林寺), a temple in present-day Shiroura, Kihokuchō, Mie Prefecture, near the Ōjiro shrine. A spirit appeared to the head priest of Jōrinji in 1758 and told him that "a large whale with a child inside its belly is passing through the open sea, but until she safely gives birth to a child I wish you to remain quiet."⁴⁹ Another version of this story says that the beautiful woman who appeared to the priest in the dream said she was inside a pregnant whale and that was why they should hold their hunt after the whale had delivered, promising the whalers that they could catch the whale upon its return without her inside.⁵⁰ Unfortunately, although the priest rushed down to the beach, the whalers had already killed the pregnant whale from his dream. That same day there was no catch in Shiroura and a sickness appeared that they thought was a manifestation of the whale's curse; in Nakamura's account, the curse also included a haunted house. So in order to pacify the angry whale spirit, they constructed a memorial tower over the whale's bones, along with creating a mortuary tablet (*ihai* 位牌) which still remains in the temple where memorial services continue to be performed on the whale's death anniversary. Monuments appear to have been erected there for pregnant whales captured in the following 200 years as well.⁵¹

This need to placate angry spirits of the dead is of course not limited to whales. One story about a hunter in Kai Province (today's Yamanashi Prefecture) tells of a similar problem with killing animals that were supposed to be left alone. The hunter shot a white deer at the head of a large group, one which had even stopped in a pose against the sunset that "looked like a divine deer," and he was punished first by heavy rain and lightning immediately after the kill and then

48 One example of this is in Shiroura in 1758 where the head priest of Jōrinji dreamt of a pregnant whale, after which the villagers caught a very large pregnant right whale and were punished by disease. Akimichi, *Kujira wa dare no mono ka*, p 112. The same story is given in Yamamoto, "Kumano no kujira meguri."

49 Yamamoto, "Kumano no kujira meguri," p 6.

50 Nakamura, *Nihonjin no shūkyō to dōbutsukan*, p 89.

51 Yamamoto, "Kumano no kujira meguri" and Nakamura, *Nihonjin no shūkyō to dōbutsukan*, p 89.

by falling ill with a fever.⁵² An old man appeared to him finally in a dream, berating him for shooting a divine messenger and telling him to deify the deer and never do it again. The difference here from the whale dreams is that it is not clear whether the old man was supposed to be a deer or just representing the offended deity the deer was a messenger for; however, the fact that killing certain animals can bring down retribution is reflected in both types of story. One of the few other folktales I have found that has an animal appearing in a dream to a hunter is a story from Aichi Prefecture of mandarin ducks. The wife of a duck shot by a hunter came to the hunter in a dream (looking like a human girl), although nothing terrible seems to have happened to him. The hunter only realized the girl in his dream was probably the duck when he came back to the same spot the next year and shot more ducks, recognizing the head of one as from the pair whose male he shot previously.⁵³ So the fact that animals can appear in dreams looking like or speaking like humans does not mean that they are always seen as being directly similar to people or deserving of special treatment as a species.

Rituals performed by hunters after capturing animals can sometimes have the same purpose of placating angry spirits. As historian of religion Matsuzaki Kenzō points out in his discussion of Japanese memorial services for animals and objects, hunters had two main types of ceremonies: one to thank the kami of the mountains who offered up the prey they captured, known as a *chimatsuri* (チマツリ: blood festival), and one to placate the spirits of angry wild animals, known as a *fukumarū matsuri* (フクマル祭り: festival offering internal organs, from *fuku* 服). Both ceremonies were performed at the end of a hunt, so there is not necessarily a division between the idea of honoring the animals that gave their lives to benefit the hunters and

52 Masa Ohta, *Japanese Folklore in English*, trans. Suzue Takagi, vol. 3, Eigo de yomu Nihon no minwa (Tokyo: Asahi Shuppansha, 1982), p 38-41.

53 Fanny Hagin Mayer, *Ancient Tales in Modern Japan: An Anthology of Japanese Folk Tales* (Bloomington, Indiana: Indiana University Press, 1984), p 307.

assuming a need to placate the dead who might be angry with the hunters⁵⁴. Traces of such practices are visible in the inscription on the Kayoi whale grave as well, where after invoking the name of Buddha, it has a prayer from the *Suwa engi no koto* (諏訪縁起事). This prayer expresses the desire for the buried spirit to become a Buddha in the same way that humans can, since even if the individual buried there had been released, it would not have been able to live: in this case, it applies to the unborn whale accidentally captured when the mother was taken by whalers.⁵⁵ However, despite the invocation of Buddha, this prayer originates from the Shinto tradition honoring Suwa Myōjin (諏訪明神), the god who protected hunters. The *Suwa engi no koto* is a story that, as Michael Marra describes it, "proposes to transform a sinful practice into an act of spiritual realization" by saying that this god accepts animal sacrifices in order to enable those animals to achieve spiritual salvation, something which they as non-humans could not achieve otherwise.⁵⁶ The assimilation of Shinto practice into Buddhist form through this kind of prayer shows one way in which practices such as whaling could be justified, even in traditions that condemned killing, by finding practices within existing religious belief that mitigated the impact of the death of whales in the hunt.

Nakamura Ikuo surmises that it is unlikely for a hunters' prayer for animal spirits to have been taught by hunters directly to whalers, because the rituals related to Suwa Myōjin used by hunters were passed down by word of mouth, and thus had a tendency to become corrupted and altered over time. If the whalers had heard a version from hunters directly, it is unlikely that the prayer on the Kayoi whale grave would so closely match the text in the *Suwa engi no koto*. It is more likely that Sanyo Shōnin read the prayer in published form.⁵⁷ This prayer connects the

54 Matsuzaki, *Gendai kuyō ronkō*, p 95

55 The text of the inscription is 業尽有情，雖放不生，故宿人天，同証仏果. Nakamura, *Nihonjin no shūkyō to dōbutsukan* discusses this prayer in relation to the *Suwa engi* on pages 69-71.

56 Michele Marra, *Representations of Power: The Literary Politics of Medieval Japan* (Honolulu: University of Hawaii Press, 1993), p 128.

57 Nakamura, *Nihonjin no shūkyō to dōbutsukan*, p 70

experience of people dealing with the death of a whale to that of hunters dealing with the deaths of their prey, but only indirectly, through the burgeoning print culture network of the Edo period.⁵⁸ The transmission of many kinds of information in print media to a wide audience may also explain the proliferation of quite similar whale-dream stories in different areas.

The inclusion of a prayer from a hunters' tradition also shows how little distance there was between people living in this whaling village and the whales that passed by their shores. Hunters in the mountains and whalers living on the shore both felt the need to placate the potentially angry spirits of the animals they killed, at least in part because they were living in spaces occupied by those animals. Or rather, the animals were seen to occupy the same spaces as humans, with whales going on pilgrimages just like people. This anthropomorphic view of the reasoning behind whale movement is an important aspect of the way that Edo-period Japanese interacted with the natural environment, and it also indicates the lack of separation between coastal land-dwelling fishermen and the creatures passing through the ocean beside and around them. Stories about whale spirits do not contain any sense that simply being on land would keep humans safe or apart from creatures of the sea. If whales could appear in one's dreams, then they could also exact revenge on people who did not comply with their requests. None of the stories about warning dreams suggest that there was somewhere far enough away from whales for humans to avoid the problem. The coastal marine environment was not seen in this case as distinct from the land on which coastal villagers lived, and inhabitants of the water could live or at least appear in the spaces humans inhabited, acting just like people on their pilgrimages and search for safe childbirth - in spiritual form if not in material form.

58 For a discussion of print culture in this period, see Mary Elizabeth Berry, *Japan in Print: Information and Nation in the Early Modern Period* (Berkeley, CA: University of California Press, 2006).

Responses to Whale Death Outside Major Whaling Areas

Practices that dealt with whale spirits could vary considerably in different areas of Japan. The shores of Ehime and Oita Prefectures are a good place to consider the reactions of non-whaling people to whale death, as they were not along the regular migration routes of whales, but they did occasionally see whales swimming into the Bungo Strait. Especially as whaling efforts intensified along other areas of the coast, these whales tended to be injured and dying individuals which had been hit by whalers elsewhere (in Tosa Bay or even as far as the Kumano area) before swimming into the Bungo Strait. They may have been easy prey for an opportunistic fishing expedition, or simply strand on the shore and die there without human interference. While there is no record of organized whaling groups in Ehime or Oita, there was enough exposure to whales for people to give them death register entries, talk about their appearances in dreams, and build whale graves or memorials.

Unlike the *kakochō* in Kayoi, which are devoted exclusively to listing the whales killed by the whaling group there, the registers in Ehime and Oita include the occasional whale's posthumous name mixed in with local people's. The impression this creates is that these whale deaths were relatively rare, but also that they were special enough to be included in services similar to if not identical to those given to the human dead. A temple in Usuki, Oita Prefecture records in its *kakochō* a mass for the dead with a service for the benefit of the suffering spirits of stranded whales that died in the inlet in 1870.⁵⁹ A whale grave erected in 1809 in Mitsukue, Setochō, Ehime Prefecture memorializes a whale that followed a large school of sardines into Mitsukue Bay and became trapped there, unable to exit, even with the help of local fishermen. When their attempt at assistance failed, they decided to kill it and erect a memorial in its honor.⁶⁰

⁵⁹ Nakamura, *Nihonjin no shūkyō to dōbutsukan*, p 78.

⁶⁰ Information about this memorial is available from the Ehime Learning center website, section 9: Ehime Prefectural Lifelong Learning Center, "Uwakai to seikatsu bunka (Heisei 4 nendo)," <http://ilove.manabi->

These whale graves and *kuyō* stones erected in the Edo and Meiji periods in Oita and Ehime show a concern for the whales' spirits that could not have arisen from an organized practice of killing whales and then praying for their spirits. The unusual appearance of such whales likely increased the desire of local people to mark the occasion somehow, as with the notation on the Mitsukue grave of a "strange/mysterious whale (妙鯨)." ⁶¹ Such monuments tend to be for individual whales rather than a collection of whales killed over time as with the fetal grave in Kayoi. But whatever the case, the people of villages where there were no whaling groups or tradition of organized whale hunting also saw the merit in respectful burial or memorials for dead whales, even if the majority of whale graves and memorials are found along the Pacific coast in the whaling areas on the Bōsō peninsula, Kumano coast, Tosa Bay, and in western Kyushu. ⁶²

One of the essential differences in attitude between professional whaling areas and these more opportunistic hunts in areas such as Oita and Ehime can be seen in their versions of the stories about whale spirits appearing to someone in a dream. In whaling areas, the person who had the dream usually is not able to stop others from killing the whale, while in Ehime the dreamer is successful in stopping the kill. The moral of these dream stories is not that one needs to placate the angry whales who were killed despite appearing in dreams; instead, it shows that prosperity can come from listening to the whale and keeping the promise not to hunt them until the agreed-upon time. ⁶³ For places where whaling was not a major livelihood, the message of holding back, and the practice of killing only whales that seemed to offer themselves for sacrifice by becoming trapped in an inlet or otherwise appearing in unusual circumstances, may well have been easier to accept than in places that depended on a steady catch of whales. There is

ehime.jp/system/regional/index.asp?P_MOD=2&P_ECD=1&P_SNO=2&P_FLG1=4&P_FLG2=1&P_FLG3=1&P_FLG4=4. Accessed August 2, 2013.

61 The inscription is not completely legible, but it references a *myōkujira* 妙鯨, a whale that is either unusual or excellent. Ehime Learning center website, "Uwakai to seikatsu bunka."

62 Nakamura, *Nihonjin no shūkyō to dōbutsukan*, p 74.

63 Miyawaki and Hosokawa, *Kujirazuka kara mietekuru Nihonjin no kokoro*, p 40.

obviously a difference in the kind of gratitude implied by the construction of a memorial for whales killed by a whaling group, as in Kayoi where whalers had a direct hand in the death of the whale, and that behind constructing a memorial for a whale found already dying from injuries sustained in an attack by killer whales, for example, the case of the Mankichiji (萬吉寺) memorial discussed below.⁶⁴

In these areas, many of the whale graves seem to mark the place where the whale was stranded, so that there are a scattering of gravesites off the Ehime coast, some of them on uninhabited islands. For people who would not be continuing to bring back more whales that needed memorializing, it makes sense to have simply set up a grave for each individual and extraordinary whale death. In whaling areas, there are at least three graves for multiple whales: in Kayoi, in Mie Prefecture and in Yobuko, Saga Prefecture, so Kayoi is not a unique case for this type of memorial.⁶⁵ However, this does not mean that opportunistic stranding and single-whale graves were restricted to non-whaling areas such as the lands along the Bungo Strait. Some of the graves in Mie Prefecture were erected similarly on the occasion of specific stranded whales rather than as monuments for a whaling group.⁶⁶ Rather than placating an angry spirit, such individual monuments are far more likely to celebrate the benefits gifted to the village by the injured or stranded whale they found. This fits in with the stories of dreams which show that adhering to the promise brings a reward in place of the curses brought to those who broke the promise in the stories from Kayoi and Kumano. A whale which was already dying, or at least far weaker than usual, would be the only target tempting enough for people who were not practiced in whaling to try to catch. Even then they would probably only pursue such whales in extraordinary circumstances where the meat or money would be particularly useful. This is

⁶⁴ Ibid., p 68.

⁶⁵ Ibid., p 123-124.

⁶⁶ Ibid, p 47-48 talks about islands; the discussion of Mie is from Matsuzaki, *Gendai kuyō ronkō*.

certainly the motivation behind, for example, the 1892 memorial at Mankichiji in Ehime Prefecture, commemorating a whale injured by killer whales and found on or near the beach. Villagers took the body and sold it, and with the proceeds bought back the land that they had previously had to sell off in more desperate times, which led to a memorial to thank the whale for this bounty.⁶⁷

Beyond Whale Graves: Whalers' Spirituality and Shinto Festivals

As indicated by the story of the whale grave constructed in Kayoi, the impetus behind whale graves and memorials was sometimes driven by people not directly participating in whaling, such as local priests. However, there is also evidence that the whalers themselves had particular religious responses to whales' deaths. These rituals fit into the same sort of practice as hunters' expressions of thanks for their prey having given up its life, and are thus not unique to whaling. Donations of *ema* (絵馬) or other indications of thanks given to a local shrine for the prosperity brought to a village by whales, especially in places where whaling was an organized practice rather than an opportunistic one, were a regular part of seasonal practice. This is equivalent to the practices for other forms of fishing or farming, which had a tendency to vary in their bounty from season to season or year to year. Edo-period sources describing whaling also sometimes mention the harpooners' dance (*hazashi odori* 羽指踊), a yearly practice which is the root of some of the whaling dances still performed today in places such as the town of Taiji, in Wakayama Prefecture. The section on this dance in the whaling scroll collected in the *Hizen no kuni sanbutsu zukō* (肥前国産物図考) explains that it was customarily the first dance in the first month of the year, and processed from in front of the shrine to the processing sheds, after which there was a cup full of sake presented to end the celebration. Furthermore, the text notes that the

⁶⁷ Miyawaki and Hosokawa, *Kujirazuka kara mietekuru Nihonjin no kokoro*, p 68.

gongs used as part of the accompaniment of the dance "have the meaning of a whale *kuyō*" or, in other words, were used because they were meant to memorialize the whale spirits taken by the dancing harpooners.⁶⁸ This consciousness of whale spirits also seems to have been present in the hunt itself, as in some places there was a ceremonial sake cup passed around above the whale carcass as it was being towed between two boats on the way to the beach.⁶⁹

There are two old histories of whaling which, while they were not written by whalers themselves, were written by people in close contact with whalers in Hizen (the northern section of modern Nagasaki Prefecture). They both describe the relationship between whalers and whale spirits. The first is *Saikai geigeiki* (西海鯨鯢記), the oldest remaining whaling history, from 1720. In this text's description of the hunt, the author explains that before the whale died, as its last breath was gurgling in its throat, the crew and the harpooner would in one voice chant the *nembutsu* or Namu Amida Butsu (南無阿弥陀仏) three times.⁷⁰ Practices such as these provide a glimpse into the pervasiveness of the religious responses to whale death; it was not just the duty of the local priest to care for the spirits of whales killed by whalers, but rather something that the harpooners and other crew directly involved in the hunt paid at least ritual attention to.

The description written in 1847 about the so-called "whale battle" in Ogawajima (*Ogawajima geigei kassen*), an island in Karatsu domain in Hizen, confirms that this Buddhist-inspired relation to whales continued through the following century.⁷¹ While the description in

68 As described in *Hazashi odori* section of the whaling scroll collected in *Hizen no kuni sanbustu zukō* 4, reprinted in Saga kenritsu hakubutsukan, *Genkai no kujira tori: Saikai hoge no rekishi to minzoku* (Saga: Saga kenritsu hakubutsukan, 1980), p 137.

69 This appears, for example, in one of the illustrations in one of the illustrations of the eighteenth-century scroll Anonymous, "Illustrated Scroll of Whaling (Keigei-Ki Mokuroku)," (Harvard Art Museums, Arthur M. Sackler Museum).

70 Hirado-shi kyōiku iinkai, *Saikai geigeiki*, Hirado-shi no bunkazai (Hirado: Hirado-shi kyōiku iinkai, 1980), p 32.

71 Ambros, *Bones of Contention*, also discusses this text in relation to animal memorial rites balancing the recognition of animals as spiritual beings with the potential for enlightenment with the problem of their role as commodities for human use.

Saikai geigeiki is presented as a relatively matter-of-fact history, the later *Ogawajima* story is much more dramatically framed. The battle to which the title of *Ogawajima geigei kassen* refers was not a moment of conflict between human whaling groups, but rather was meant to be evocative of the ways in which the practice of whaling centered on one of the last remaining warlike endeavors in the peaceful Tokugawa period. This is clear from the beginning of the text, where the author explains:

In this world of universal peace, where bows are left in their cases, and swords are closed in their boxes, there are none who have seen war, and the condition of battlefields has unfortunately become old stories. In this kind of world, I would like to show in detail before your eyes the conditions of the battle to catch whales.⁷²

The warlike process of hunting whales included a prayer said before going out to battle, and other song-prayers which hoped for success in the hunt were also copied into the text. These kinds of prayers are not specific to whaling, but the description of the whale's death is slightly different. This is where the author explains the strong ties between the mother whale and her young, and brings up the idea not just of the whale's affection for her young (using the same word for human children, *ko* 子) but also the corresponding compassion that should be felt by the harpooners as they remorsefully kill such impressively affectionate and caring creatures. This leads naturally to the question of how moral people feeling Buddhist compassion could reasonably make a livelihood based on the suffering and death of whales. The answer given to that dilemma, which may or may not be what the whalers themselves provided to the author of the text, is that "even for humans there is life and death, the ten thousand things [ie, everything] are all thus."⁷³ Also, there is a practical explanation given that there were many whaling groups from the Kumano coast to the Saikai area of Kyushu, which means that "if one is not able to take

72 Hōshūtei Riyū, "Ogawajima geigei kassen," ed. Nōsan gyoson bunka kyōkai (Tokyo: Nōsan gyoson bunka kyōkai, 1840), p 288-289.

73 Ibid., p 361.

[whales] in this place, they will be killed in another."⁷⁴ So whaling was like any other use of once-living creatures for human benefit, where the happiness and aid that the whale's body could give to many hundreds or thousands of people outweighed the misfortune and suffering of one whale. A practical cost-benefit analysis does not preclude an acknowledgement of the whale's side of things, because at the end of every whaling season the monks at Ryūshōzenji (龍昌禅寺) in the village of Yobuko (on the mainland near Ogawajima) conducted memorial *kuyō* for the whales caught that year, recording their death days and posthumous names and sending offerings out to sea to show the people's thanks for the benefits that the death of the whales provided to them. The harpooners, as the people most directly related in the death of the whale, chanted the nembutsu in hopes that the whale would become a Buddha, and thus the spirits of the whales fit into the regular spiritual practices surrounding death for the people of the area.

Buddhism was not the only framework through which the spiritual aspect of whales was interpreted, although it was the one which was most often used to deal with death.⁷⁵ In the context of a society with many local festivals based on experiences in their everyday lives, there were of course also festivals which included whales and referenced whaling practices in areas with whaling groups. Some of these festival practices linger even today, long after the villages in question have ceased traditional whaling. For example, there is a whale float which spouts water during the *kunchi* (くんち) festival's parade in Nagasaki (not brought out every year), and a reconstruction of a whale hunt using parade-floats in Yokkaichi. While there are only a few such examples remaining today, this does not mean that festivals relating to whaling were rare during the early modern period. However, the fact that these remaining practices are not all the same

⁷⁴ Ibid., p 362.

⁷⁵ For a discussion of the role of Buddhism in dealing with death during this period and how it came to be the practice most concerned with the problem of death, see Nam-Lin Hur, *Death and Social Order in Tokugawa Japan : Buddhism, Anti-Christianity, and the Danka System*, Harvard East Asian Monographs (Cambridge, MA: Harvard University Press, 2007).

does indicate how closely tied to individual locations they may have been. Similarities between forms of whale grave or *kuyō* or shrine practices are on a broad scale, indicating common forms of Buddhist or other religious philosophies, but the differences in specifics show how these practices were interpreted through local lenses of experience and lifestyle. This is clearer in the case of Shinto practices because the Buddhist influences on whalers were more standardized philosophical ideas. Thus, it is important to remember that any given evidence of a specific religious practice such as whale graves or the festival floats in the Nagasaki *kunchi* does not stand in for a common practice throughout all whaling areas, even while the distribution of these practices indicates that there generally was some kind of religious component to the interactions between whalers and whales.

There are other ways in which the hunt or the death of whales could be memorialized. At the Asuka shrine (飛鳥神社) in Taiji, Wakayama Prefecture, on the 13th day of January there is an archery ceremony (*oyumi no shinji* 御弓神事) where an arrow is fired at a target on which three carved wooden whales are attached. *Oyumi no shinji* in general are ceremonies performed at a shrine in order to predict, using the number of arrows that hit the target, the weather and success of the harvest in the coming year; the whale-shaped pieces added to the target in Taiji are said to help bring in a good catch for the following year of whaling.⁷⁶ There are also some *ema* and other donations to local shrines still in existence, which show the image of a particular hunt whose success they commemorate or hope for. This is a different expression of respect for whales and what they might bring to local fishing villages than that shown by Buddhist whale graves, although the division between these religious practices was not necessarily strong. In the case of shrine donations and ceremonies, the emphasis was on having the local *kami* (神) bring

76 Fukuoka-shi hakubutsukan, "Fukuoka-shi hakubutsukan tokubetsu kikakuten: Nihon to kujira," ed. Fukuoka-shi hakubutsukan (Fukuoka: Shunhōsha shashin insatsu KK, 2011). p 192. The definition of *oyumi no shinji* comes from the online *Daijirin* dictionary available at <http://www.weblio.jp/cat/dictionary/ssdj>. Accessed June 2, 2012.

good fortune to the hunt, and thus it was not centered on an awareness of bringing death to individual whales so much as on an awareness of how to gain the benevolent attention of a spirit or god which would be willing to provide whales to whalers during the hunt.

Conclusion: The Spiritual Place of Whales, Humans, and Others

In the case of yearly memorial services performed continuously for over a hundred years, modern explanations for and attitudes about the practice may well differ from when the rites began. While the form of the ritual and the memorial stones may not change, the ideas attached to them are more likely to have shifted with cultural shifts over decades and centuries. Therefore, some analysis about why various religious practices related to the death of whales were performed must necessarily be tentative. It is common to note any expression of thanks, for example towards whales who have given up their lives for the benefit of humans, as a consciousness of nature or a strong tie to the natural world. But there are many different ways that "nature" can be defined, and the American tendency towards seeing nature as untamed wilderness is certainly far from the type of natural world in which the early modern Japanese lived.⁷⁷ The ways in which whales were seen to be like humans, in their pilgrimages, concern for their young, and in the offering of posthumous Buddhist names to their spirits, are, on the contrary, indications of the ways in which the Japanese of the Tokugawa period saw and shaped the natural world in anthropocentric terms.

Furthermore, such expressions of closeness or reverence can have varying degrees of sincerity. For example, a survey of elementary and middle school students related to a moral tale which was supposed to educate them in the need for reverence and thankfulness for the plants

⁷⁷ For a discussion of the problem of Japanese perceptions of nature, see Julia Adeney Thomas, *Reconfiguring Modernity : Concepts of Nature in Japanese Political Ideology*, vol. 12, Twentieth-Century Japan (Berkeley, Calif.: University of California Press, 2001).

and animals that gave their lives to become food noted that over 70% of the students always spoke the word which serves the same function as saying grace in Christian culture (*itadakimasu* いただきます) before eating, but 60% of students had barely thought about the meaning at all, simply speaking it by rote.⁷⁸ Thus, the presence of such practices expressing thanks for the bounty of nature does not guarantee that the practitioners feel thankfulness during every iteration of the practice. In the case of religious rituals performed by monks or priests, it is likely that the emotional connection and desire to express gratitude or remorse are more well-maintained than in the case of daily practices of everyday people (especially children). The continuation of whale *kuyō* year after year in just the same fashion as ones performed for the human dead does show a strong consciousness of the presence of whales not just in the physical world but also in the spiritual world of the people living in villages where whales were killed, either regularly or occasionally. Prayers carved onto memorials expressing the wish for whales to become Buddhas after their death admit the possibility that whales (and the other animals, and sometimes even household objects honored with *kuyō* memorials) have souls just as important as human ones, capable of following the same spiritual paths. It is in this sense that one can discuss a certain "closeness to nature" in Japan, in contrast to the type of Western (often Christian) thinking which places humans above other living beings by virtue of their souls. By admitting the possibility of any living thing to eventually become a Buddha, there is perforce a less stark division between the human and the nonhuman.

Still, the depiction of these practices as demonstrating a consciousness of nature (in the sense of untouched wilderness) closely interwoven with human lives can be a modern imposition

78 Ōtsuka Shūichi, "Iyo no kujirazuka kara Saikaiiki no kujirazuka e, jiko jitsugen ni idomu: kami shibai 'Kaneko Misuzu to kujira hōe no ohanashi' no sōsaku, jistuen to sono hankyō," in *Kujirazuka kara mietekuru Nihonjin no Kokoro II: Kujira no kioku wo tadotte Saikaiiki e*, Hosokawa Takao, ed. (Tokyo: Nōrin Tōkei Shuppansha, 2012), p 164

onto past attitudes. The struggle to preserve a distinctive culture for towns and areas which are losing population and fear the loss of their cultural heritage, as is the case today in many of the villages which formerly were centers of whaling such as Taiji, Kayoi, Arikawa and Ikitsukishima, can overstate the historical continuity of cultural practices including religious ritual or memorials. One description of the whale-jaw shrine gateway (*torii*) in the village of Taiji says that it was "reconstructed" in the modern era based on there being a mention of such a gate in a satire written by famous Edo-period writer Ihara Saikaku in his *Nippon eitaigura*.⁷⁹ There is, however, no other evidence that the shrine had such a gate in the past, and this detail may well have been something that Saikaku added to his story to show the exaggerated wealth and ostentatious behavior of the character who earned much of his money from whaling.⁸⁰ So it may be more apt to say that it was first constructed in the modern era rather than reconstructed. Especially in cases where a yearly service has been performed ever since the erection of a memorial, current explanations of attitudes towards such memorials should be carefully compared with the earlier context in which they were created to make sure that the ongoing nature of the tradition does not obscure changes in culture and society over the intervening time that may have altered the role or perception of these services in the modern era.

Interactions between humans and whales in the spiritual sense were affected by the particular environment in which they appeared. They varied, for example, for religious leaders and layfolk, for people in areas with professional whaling groups and those where interactions with whales were more opportunistic. The differences between the outcomes of stories of whales appearing in dreams begging not to be hunted show how characteristic interactions with local

79 Anonymous, "Wakayama-ken Higashimuro-gun Taiji-chō chōsa hōkoku (2004/10/23 - 25)," *Rikkyō Daigaku Nihongaku kenkyūjo nenpō* 5 (2006).

80 Taiji Akira believes that this archway was a modern construction based on Saikaku's reference rather than being a reconstruction of a whalebone gate that actually existed in the past. Pers comm.

environments could changed people's attitudes. While whale graves do show a particular consciousness of the spiritual connection between humans and whales in early modern Japan, this connection made whales more like humans rather than giving humans any kind of special insight into a nature distinct from human experience. This holds true even for animals like whales that lived in the very different marine environment, turning the sea into a place similar to the paths that human pilgrims could tread on land. In fact, whales were thought capable of appearing at least spiritually within human living spaces, which shows how closely interwoven the marine and terrestrial environments could be. Thus, while whales were not the only animal for which memorials or graves were erected in this period, the peculiar circumstances of whaling make them an interesting representative of the blurred boundaries between the lives and afterlives of humans and other animals, and between the land and the sea.

Chapter 5

Building Empires on the Backs of Whales: From Traditional to Modern Whaling

By 1875, whaling was being linked to the strength of the new Meiji state. Baron Nagaoka Moriyoshi (長岡護美), a diplomat and later a member of the House of Peers, claimed that "knowledge of the use of whales drives the wealth and power of the nation."¹ In other words, the development of a modern Japanese whaling industry would go hand-in-hand with the development of a strong, internationally competitive Japan. Whales were an obvious route to international imperial status, given the important role that American whalers had taken at the forefront of American expansion into the Pacific. The complex international and imperial politics surrounding nineteenth-century Japan turned in part on who had access to the Pacific Ocean's resources, including whales and the products derived from them. The extensive organized whaling industry of Tokugawa Japan had been a near-shore enterprise, relying on beaches for processing whale carcasses hauled back to shore by small open rowboats. But the same near-shore migratory whale populations that provided targets for Japanese whalers were also targets of much more intensive efforts by Western whaling nations in the nineteenth century. As Britain and then the United States developed open-ocean Pacific whaling grounds, whale populations crashed. At the same time, more and more ships were appearing off the Japanese coast and pushing for access to trade.

Japanese whalers had a variety of potentially influential roles in the nineteenth century. At first, the brave warriors who hunted down and harpooned whales were seen as a possible

¹ Nagaoka Moriyoshi, first preface to Fujikawa Sankei, *Hogei zushiki* (Kobe: Inoue Shinkōdō, 1888), page 5 reverse. He was minister of the Dutch legation in the Ministry of Foreign Affairs beginning in 1880. At the time he wrote the preface, he was a Baron (*danshaku* 男爵), but was eventually promoted to Viscount (*shishaku* 子爵) and later served in the House of Peers until his death in 1906. His rank of Baron was published in Ōkura shōin satsukyoku, "Kanpō," No. 308 (July 9, 1884), p 8; at the time of his death in 1906 he was a Viscount: Ōkura shōin satsukyoku, "Kanpō," No. 6830 (April 10, 1906), p 261.

naval force to push back against expanding imperial encroachment into Japanese territory. They were then considered as potential claimants for territory that other nations wanted, including Ezo/Hokkaido, Korea, and the Ogasawara (Bonin) Islands. Finally, Japanese whalers and fisheries promoters tried to lay claim to an even wider resource base by adopting the modern whaling methods developed by Western nations and joining the international hunt for whales throughout the Pacific. This chapter will consider the role of various forms of Japanese whaling in the contest over imperial resource claims. It will also examine how the introduction of Western whaling methods and scientific fisheries management applied to whaling dramatically changed the boundaries of the environment belonging to Japan.² From the backs of whales, we can see how imperial powers interacted with marine resources in the northern Pacific at the start of the modern era, reshaping the marine environment and who laid claim to it.

Much of the scholarship focusing on Japanese use of marine resources deals with the years surrounding World War II rather than the earlier stages of the Japanese empire. One example is the discussion of the revitalization of the Japanese fishing fleet after the war and the problems of territorial claims that it engendered.³ For whaling in particular, the International Whaling Commission's policies for conservation have been a contentious part of environmental politics since the late twentieth century, and Japan has been one of their major opponents.⁴ J.R. McNeill's global environmental history, which admittedly has little space for fisheries as a

2 For an analysis of Japan as a maritime empire, see William M. Tsutsui, "The Pelagic Empire: Reconsidering Japanese Expansion," in *Japan at Nature's Edge: The Environmental Context of a Global Power*, ed. Ian Jared Miller, Julia Adeney Thomas, and Brett L. Walker (Honolulu: University of Hawai'i Press, 2013). For a discussion of the impact of fisheries management strategies in other types of Japanese fisheries, see Micah Muscolino, "Fisheries Build up the Nation: Maritime Environmental Encounters between Japan and China," in *Japan at Nature's Edge*, ed. Ian Jared Miller, Julia Adeney Thomas, and Brett L. Walker.

3 Chapter 4 in Carmel Finley, *All the Fish in the Sea: Maximum Sustainable Yield and the Failure of Fisheries Management* (Chicago: University of Chicago Press, 2011).

4 Works that focus on the international politics of whaling include Harry N. Scheiber, *Inter-Allied Conflicts and Ocean Law, 1945-53: The Occupation Command's Revival of Japanese Whaling and Marine Fisheries* (Taipei, Taiwan: Institute of European and American Studies, Academia Sinica, 2001), Jun Morikawa, *Whaling in Japan : Power, Politics and Diplomacy* (New York: Columbia University Press, 2009), and Peter J. Stoett, *The International Politics of Whaling* (Vancouver: UBC Press, 1997).

whole, notes Japanese entry into the Antarctic whaling grounds in the 1930s as the start of their substantial impact on whale populations, leaving out the process by which Japanese whalers ended up moving so far from the near-shore coastal whaling of the Tokugawa period.⁵ While the modern Japanese whaling fleet is quite different from its nineteenth-century counterpart, whaling was an imperial endeavor in Japan long before the 1930s, as were many of the fisheries promoted by the Meiji government in the new industrial era near the end of the nineteenth century. The expansion of motorized Japanese fishing fleets out into the East China Sea in the early twentieth century, for instance, was driven in part by the government trying to remove conflict with traditional fisheries in the waters close to Japan, by promoting expansion into deeper waters outside the three-mile territorial limit.⁶ Jessamyn Abel's discussion of the international cultural politics of whaling points out the pivotal moments for Japanese whaling on the international stage not just in the 1980s but also in the 1850s, but this analysis skips over the intervening years and the process by which Japanese whalers continued to be part of the international relations of the Japanese empire.⁷

This chapter will consider the shifting role of Japanese whaling from the early 1800s through the early 1900s, to show the importance of marine resources in the development of the Japanese empire and territorial expansion. I will first look at the role that traditional, shore-based whalers had in defending the Japanese coasts. This includes their potential for expanding what counted as "Japanese" coastlines in the face of pressure from Western empires, starting with Russian expansion in the north. The work of Japanese coastal whalers was unsuccessfully

5 J.R. McNeill, *Something New under the Sun: An Environmental History of the Twentieth-Century World* (New York: W.W. Norton & Co, 2000): 237-243.

6 Disputes between Japan and China over the yellow croaker fishery were one result of this policy. Micah Muscolino, "The Yellow Croaker War: Fishery Disputes between China and Japan, 1925-1935," *Environmental History* 13, no. 2 (2008); Muscolino, "Fisheries Build up the Nation."

7 Jessamyn Abel, "The Ambivalence of Whaling: Conflicting Cultures in Identity Formation," in *Japanimals : History and Culture in Japan's Animal Life*, ed. Gregory M. Pflugfelder and Brett L. Walker (Ann Arbor: Center for Japanese Studies, University of Michigan, 2005).

leveraged into a tool for territorial expansion, in a failed attempt at claiming areas in Ezo and further north for the Tokugawa government. However, the project's failure does not diminish the importance of whaling's influence on the possibilities and plans for marking out Japanese territory. This section will also consider the effects that the foundation of a whaling outpost in Pusan, Korea, had on Japanese claims and interests in Korea. Next, I will turn to the question of whaling as a tool of Western (and Western-style) empires. Access to whales in the nineteenth century was, of course, instrumental in the expansion of American interests. Commodore Perry pushed to open Japan in part to allow American whalers a place to restock without fear of death or imprisonment.⁸ Thus, the possibilities of territorial claim offered by the presence of whalers in far-flung ares of the sea were recognized by the Japanese, who began to try to exploit these same areas of the Pacific in the late nineteenth century. I will also briefly consider why, with Japan expanding into new whaling territories especially at the end of the century, they did not immediately join the competition for Antarctic whaling. By looking at the various attempts to revamp Japanese whaling practices along the model of and in competition with Western whaling empires, I will investigate ways in which, long before the modern "whale wars", whales became a political as well as natural resource for Japan and the empires it interacted with.

Japanese Whalers and Early Coastal Defense

During the Tokugawa period, the ties between the techniques used for harpooning whales and the skills necessary to fight people on the sea were clear. The background of some of the men who founded whaling groups included fighting skills potentially relevant to naval warfare: one of the three men who founded the first whaling group in Taiji in 1606 was a rōnin with experience supervising fleets, and another, whose family may have had some ties to piracy in the

⁸ Ibid.

past, was awarded his position as a village elite for supporting Tokugawa Ieyasu at the battle of Sekigahara.⁹ In Tosa, as well, the first whaling group was founded in 1624 by a former samurai with naval experience during the Warring States period.¹⁰ A history of this whaling group written in 1902 characterized the endeavor as being part of a duty to protect the shores of Tosa. In this history, the experience of the rowers on a whaleboat pursuing a whale was likened to attacking an enemy ship.¹¹

Through descriptions of different whaling groups, the close connections between warriors and whalers were known to those outside of whaling groups as well. This is particularly apparent in depictions of Kyushu whaling, most prominently in an often-copied piece from 1840 called *Ogawajima geigei kassen*, or the "Ogawajima whale battles". This work describes whaling out of Yobuko, in today's Saga Prefecture, as if it were a battle, including descriptions of preparing the whale-warships and the names of various harpoons and flensing knives using terms like *naginata* (長刀) to show how such implements were weapons of war. Such weaponry was used "to attack and destroy the great enemy known as the whale."¹² The bloodiness of harpooning a whale may have made the association between whaling and war even more vivid, as a description of whaling from Hizen noted the harpoons flew from a whaleboat "not unlike a warship, and the sea spray became scarlet" (Figure 5.1).¹³

9 The former was a man from Sakai named Iemon: Yamashita Shōto, *Hoge I*, *Mono to ningen no bunkashi* 120 (Tōkyō: Hōsei Daigaku Shuppankyoku, 2004) and Takigawa Teizō, *Kumano Taiji no denshō: Takigawa Teizō ikō* (Tōkyō: Kōsakusha, 1982). The latter was Wada Yorimoto: Takigawa, *Kumano Taiji no denshō*, 107.

10 Tada Gorōemon became village headman in Tsurō after having served in boats during the Warring States period and founded a whaling group in Tosa Bay. See Muroto-shi shi henshu iinkai, *Muroto-shi shi* (Muroto: Murotoshi, 1989), 87-88.

11 Ibid., 88.

12 Hōshūtei Riyū, "Ogawajima Geigei Kassen," ed. Nōsan gyoson bunka kyōkai (Tokyo: Nōsan gyoson bunka kyōkai, 1840), p 289.

13 A version of this work is listed in the National Diet Library as Kizaki Morisue, "Shōni no rōgei ikken no maki," in *Hizen Karatsu hoge zusetsu*, with no date. The National Archives of Japan have a slightly different version from Kizaki Moritaka, "Shōni no rōgei ikken no maki," in *Hizenshū sanbutsu zukō*, 1773.



Figure 5.1: Images of the bloody nature of whaling from Kizaki Morisue, “Shōni no rōgei ikken no maki,” in *Hizen Karatsu hogeizusetsu*, date unknown. The image on the left is from page 12, showing the process of harpooning the whale, with the highest-status harpooner standing on the back of the whale for the death blow. The image on the right is from page 14, showing the process of cutting up the whale on the beach, with blood seeping into the waters around the whale turning it crimson. Courtesy of the National Diet Library of Japan.

These nineteenth-century descriptions of the martial aspects of whaling may have proliferated in part because the idea of defending the coasts was becoming more prominent in response to outside pressures at that time. After 1800, a growing number of foreign ships were pushing to be allowed to trade with Japan. One of the ways that the various domainal governments dealt with this influx was by sending out ships to patrol their coasts. Because there was no standing navy at this time, the best (and sometimes only) source of these ships was fishermen. As the group of fishermen most well-known for their martial skills, whalers were one of the top choices for possible defenders of the coast. The more pressure foreign ships put on Japanese borders, the more prominent the possibility of whalers as coastal defenders became. For example, Ōtsuki Heisen, in his thorough description of whales and the process of whaling in western Japan, *Geishikō*, published in 1808, argued that:

the whaling group is the best guard for a country surrounded by the ocean...A whale boat can carry out the duties of a warship, and the spears and so forth that they use in order to bring down a whale can be converted into military goods. Those who hunt whale-fish are able to move around on the ocean freely, and therefore are the most suitable war preparations for protection against foreign invaders.¹⁴

Heisen's discussion of whalers was from the perspective of an advisor to the shogunate worried about the encroachment of Russians in the north, but this was not the first time that whalers had come to the attention of government officials. Tokugawa Yoshimune had certainly been aware of whalers' potential as coastal defenders. He had been head of the Kii domain before his time as shogun from 1716-1745. As discussed in Chapter 1, Kii included one of the major whaling areas in early modern Japan, the Kumano coast villages of Taiji, Koza, and Miwasaki.

¹⁴ The original text exists in different copies of *Geishikō* without consistent page numbers, but this quote appears in the final section of volume 6, "鯨部兵寓: *kujiragumi hei wo yosu*" [suggesting a whaling group army]. This section's original text, as well as a modern Japanese translation, is available in Mori Hiroko and Miyazaki Katsunori, "Bunka 5, Ōtsuki Seijun 'Geishikō' seiritsu no seijiteki haikai," *Seinan gakuin daigaku kokusai bunka ronshū* 25, no. 2 (2011), 76-77.

During his tenure as shogun, Yoshimune "had ships patterned on the Taiji whalers anchored in Edo (Tokyo) Bay for protection".¹⁵ This was before the greatest pressure from Western empires, but it does show that concerns about coastal defense brought to mind the well-known martial expertise of whalers. Whalers-as-navy were especially important during a period when there was otherwise very little focus on ships and naval forces capable of travelling beyond the nearshore areas of the Japanese islands. The tightening of regulations about trade with outside entities in the early Tokugawa period left a number of people, especially those in the Saikai area of northern Kyushu, without employment. Whaling offered a good substitute for people who already had experience with boats. Furthermore, encouraging the development of whaling would benefit local domains, who could use the whaling fleet as a "way to maintain some kind of naval power after restrictions were put on trade and ship size" by the shogunate.¹⁶

By the nineteenth century, the idea that whalers' expertise could be turned to the defense of the country was appearing more frequently. As early as 1794, Kii domain was putting whalers and their boats to use as part of their coastal defense policy.¹⁷ This policy continued into the nineteenth century: in 1866, two whaleboats from Miwasaki, three from Taiji, and five from Koza were sent to Chōshū as part of their corvée duty, presumably because foreigners offshore were more of a problem in the southwest than directly off the Kumano coast.¹⁸ But the usefulness of whaling as a way to stand firm against encroaching empires did not stop with the assumption

15 Hashiura Yasuo, "Whaling at Taijiura, a Series of Scrolls: Appendix to A History of Whaling at Taijiura, Kumano", Supplement to *A History of Whaling at Taijiura, Kumano*, edited by The Committee for the Compilation of A History of Whaling at Taijiura (Heibonsha, 1969), 2.

16 Torisu Kyōichi, *Saikai hogeigyōshi no kenkyū* (Fukuoka-shi: Kyūshū Daigaku Shuppankai, 1993), 80-81.

17 Kasahara Masao, *Kinsei gyoson no shiteki kenkyū : Kishū no gyoson o sozai to shite* (Tōkyō: Meicho Shuppan, 1993), 158.

18 Takigawa, *Kumano Taiji no denshō*. Given that whales were becoming rare, whalers would be unlikely to lose catches by leaving for this duty. That did not mean they were eager to forego the possibility of a catch in order to take up unpaid patrol duties. This may have been especially true when those duties were in a different area of the country.

that whalers had warlike skills honed by their profession. Whalers also became instrumental in specific political projects relating to expanding territorial claims for the nascent Japanese empire.

Japanese Whalers, National Defense and National Resource Claims

As Russian explorers began expanding their empire to the Pacific coast, and thus started to interact with people in the far north of Japan, control over the territory of Ezo (modern Hokkaido) became a prime concern. As environmental historian Brett Walker points out, the authority of the Japanese state in the early modern period was projected into Ezo economically before it was projected politically. The shogunate and its representatives during the Tokugawa period "cast their gaze widely over Hokkaido, the Kuril Islands, and much of Sakhalin Island, searching for new resources."¹⁹ Because of these economic ties to tribute and trade with the Ainu, officials in the shogunate were well aware of the position of this island as a buffer zone between Japan and other political interests. While Russians had been exploring in the Kuril Islands throughout the eighteenth century, it was not until 1792 that the first official Russian embassy to Japan arrived. Lieutenant Adam Laxman brought a group of Japanese castaways along the shores of the Kuril Islands and down to Ezo, from whence he hoped to continue on to Edo and open up trade relations. However, the authorities instead invited Laxman to meet in the town of Matsumae rather than set foot on Honshu. He was able to return to Russia with a permit allowing one Russian ship to enter Nagasaki for further negotiations, but when Nikolai Rezanov finally brought a ship to Nagasaki in 1803 under this permit they were refused trade rights. Meanwhile, Russians continued to build a presence in the Kuril Islands, with Rezanov promoting

19 Brett L. Walker, *The Conquest of Ainu Lands : Ecology and Culture in Japanese Expansion, 1590-1800* (Berkeley: University of California Press, 2001), 13.

attacks on Japanese settlements on Sakhalin and Etorofu in response to the failed trade negotiations.²⁰

During this period, the shogunate was worried that Russia might gain a foothold in the far north, supplanting the Japanese interests that were expanding into the same area. There were fears that the Matsumae (松前), who had been in control of trade with the Ainu, were not going to be strong enough to prevent encroachment. Plans to strengthen claims on the land and control the area more directly included setting up a whaling operation out of a new base established in the far north.²¹ Two harpooners from Hirado were sent in 1800 to survey Ezo and try to find a site for a whaling group. After a 25-day survey, they gave up on the idea, because they saw no right whales, only the less-profitable humpback whales, and they did not find a good site to set the deep nets used in the coastal whaling technique they were most familiar with. In their report, they estimated that it would cost the government around 20,000 ryō to establish a whaling group in such an inconvenient site, so the plan was never implemented.²²

Even though this first attempt at founding whaling groups in the far north was not successful, the idea remained. Likely its persistence after this first failure had to do with the way that foreign whalers began pushing territorial boundaries starting in the mid-nineteenth century, the same way the Russian explorers had been pushing Japanese attempts to firm up boundaries in the north around the beginning of the century. The later attempts to found whaling bases in Ezo/Hokkaido were different because they introduced the possibility of using Western whaling techniques, rather than traditional Japanese net whaling. The seventh head of the Daigo whaling family, Daigo Shinpei Sadatsugu (醍醐新兵衛定緝), who managed whaling groups on the Bōsō

20 David N. Wells, *Russian Views of Japan, 1792-1913: An Anthology of Travel Writing*, RoutledgeCurzon Studies in the Modern History of Asia (New York: RoutledgeCurzon, 2004), 1-13 has a good summary of relations between Japan and Russia during this period.

21 For more information on the politics of Ezo and Hokkaido, including the role played by the Matsumae, see Walker, *The Conquest of Ainu Lands : Ecology and Culture in Japanese Expansion, 1590-1800*.

22 Mori and Miyazaki, "Bunka 5, Ōtsuki Seijun 'Geishikō' seiritsu no seijiteki haikai," 71-73.

peninsula in Katsuyama, went to Ezo in 1802, 1854 and again in 1863 trying to found a whaling group there. His second visit involved a trip along the southeast coast, where he supposedly saw Ainu hunting whales and thought that therefore there would be a possibility of introducing Western-style whaling to the area. He described the Ainu techniques as childish, and thought that "fully advanced Western-style whaling operations" would be far more successful.²³ In 1862, American-style whaling was pioneered by Nakahama Manjirō (中浜萬次郎, whose later efforts will be considered in the following section), operating out of Hakodate. The Hakodate magistrate's office even recorded their support for foreign whaleships to come into the harbor so that locals could learn their techniques by observation.²⁴ Again, none of these attempts were successful in founding a whaling group that was able last for more than a brief trial period. They do, however, demonstrate the persistence of whalers as possible claimants to resources and territories in the north which were desired by both the shogunate and by the later Meiji government.

The whaling operation backed by the Meiji government in Hokkaido was the most successful. It combined the ideas of northern defense (sending out a group of people who might persist in the area and therefore lay claim to the territory) with the notion of expansion of existing whaling operations (which would expand the resource base for the Meiji state). Even this governmentally-supported whaling was only a qualified success that did not last much past the end of the nineteenth century. The operation was under the supervision of the Nihon Teikoku Suisan (日本帝国水産) company's whaling division, run by a soldier from Ishikawa Prefecture and using Ishikawa net-whaling techniques rather than modern Western ones. Because net whaling was inherently coastal, relying on migratory populations of whales that were dying out

23 As quoted in Iwasaki Masami and Nomoto Masahiro, "Nihon ni okeru kita no kai no hoge," in *Hoge no bunka jinruigaku*, ed. Kishigami Nobuhiro (Tokyo: Seizandō shoten, 2012), 174.

24 Ibid., 178-179.

due to the intense whaling pressure throughout the Pacific in the nineteenth century, by the early 1900s this whaling group was forced to cease operations in and around Hokkaido.²⁵

The placement of new whaling groups on the edges of Japanese territory was part of the steady expansion of the borders of the Japanese empire in the nineteenth century, not just to the north but also in other directions. The shogunate cemented territorial claims in Ezo in the 1850s as a buffer against Russian claims. By 1872, the southern Ryūkyū islands were annexed, and became Okinawa prefecture seven years later. Imperial claims to territory continued to radiate outward from the central Japanese islands to nearby areas. This led first to the acquisition of Taiwan and a concession on the Liaodong peninsula after the Sino-Japanese war over Korea in 1894-95, then to another war over Korea and areas of Manchuria between Japan and Russia in 1904-1905. Unlike in the case of global European empires, far-flung expeditions to other areas of the globe were not a central part of Japanese imperial development, because colonial expansion was possible, and seen as most necessary, in the lands in the growing buffer zone around Japan.

Whaling groups also had the potential to lay claim to new areas of resources in and around Korea, a slightly later imperial interest of the Japanese empire. Of course, Japanese whalers were not the only ones to see the potential for whaling in and around the Korean peninsula during the nineteenth century. By 1880, there was a fleet of Russian whalers pursuing fin whales there. Like many whaling ships, these Russian whalers had a very multinational crew under Russian captains and Norwegian gunners, including not just Japanese but also Korean, Chinese, German and Russian crew members.²⁶ The oil was sold to England, but the meat was salted or canned and sold in Nagasaki by Japanese whale meat merchants. It may be misleading to consider the individual actions of whaling ships owned by the citizens of any one nation or

²⁵ Ibid., 178.

²⁶ I Son'e, "Kankoku no hōgei bunka - Urusan chiiki o chūshin ni," in *Hōgei no bunka jinruigaku*, ed. Kishigami Nobuhiro (Tokyo: Seizandō, 2012).

empire as representative of the goals of the empire as a whole. However, even though they may have hired people from around the world, the companies and captains running the ships belonged specifically to a particular country and could be used to promote national or imperial interests. Although at first the Russian whalers operated in and out of Korean harbors whether they were technically open for foreign trade or not, after eight years of this the Korean government tightened regulations. In 1899, the Russian whaling company was given special permission by the Korean foreign ministry to enter only three harbors with their registered fleet of eight ships.²⁷ After the Russo-Japanese War in 1905, this formerly Russian whaling fleet came under Japanese management by a company based out of Nagasaki.²⁸ By gaining the fleet as spoils of war, this whaling company became part of the politics of resource access, tightly linked to the question of who could lay some kind of territorial claim to the areas in which those resources were acquired.

In an even more direct demonstration of the close ties between imperial territorial expansion and the ability to exploit resources in such territories, imperial Japan first claimed whaling territory on the western side of the Korean peninsula after they gained a concession on the Liaodong peninsula in 1895. Soon after Japan gained this territory, Nippon En'yō Gyogyō KK (日本遠洋漁業株式会社) launched whaling operations in the waters around the Korean and the Liaodong peninsulas, and began shipping whale meat and skin back to Kyushu with the support of the Japanese government.²⁹ This was not the first time that Japanese whalers had operated in the seas around Korea, although earlier efforts had not had the same governmental backing. In 1877, a man named Moroki Sennosuke (諸木仙之助) took some of the Taiji whaling

27 Kondō Isao, *Nihon engan hōgei no kōbō* (Kokubunji-shi: San'yōsha, 2001), 197.

28 I Son'e, "Kankoku no hōgei bunka," 268.

29 Hiroyuki Watanabe, *Japan's Whaling: The Politics of Culture in Historical Perspective*, trans. Hugh Clarke (Melbourne: Trans Pacific Press, 2009), 12-13. This is described in Kishimoto Mitsuhiro, *Shimonoseki kara mita Fukuoka • Hakata no kujira sangyō bunkashi* (Fukuoka: Kaichōsha, 2011), 20, as being part of Tōyō Hōgei KK's operations, but that corporation was a successor to Nihon En'yō Gyogyō KK and did not exist under that name until 1909.

group's boats, equipment, and men and set up a net whaling base in Pusan similar to the one that had been operating in Taiji on and off since the late 1600s.³⁰ His expansion was necessitated by declining success of the whaling operations off the Kumano coast, and was not directly linked to governmental ambitions surrounding Korea or a desire to lay claim to territory per se. However, the presence of Japanese whalers in Korea and their familiarity with what kinds of whales could be found in the waters around Pusan may have supported later ideas of the potential success of the whaling companies who moved in as part of imperial expansion in this region.

When the Yamaguchi Prefectural government-backed Nippon En'yō Gyogyō KK was planning to begin whaling operations in the seas around Japan, they considered the permissions obtained by the Pusan whalers and compared them to permissions held by the Russian whaling company and by a British merchant company that were operating in the area around Korea.³¹ Eventually an agreement was worked out in 1901 whereby the Japanese whaling company could operate in waters no closer than 3 nautical miles to the Korean coast and no closer than 10 nautical miles to the Japanese one. This difference in territorial restrictions was the result of general fisheries policy that arose out of objections from Japanese inshore fishermen using older technologies, who lobbied to keep new modern trawlers with updated gear farther offshore, out of their fishing grounds.³² Thus, the agreement shows how much whaling of this period was part of new fishing technologies and modalities rather than traditional coastal ones.

The waters around Korea became a new whaling ground because they were full of the fin whales that were too fast to be caught by anything but the modern whaling technology developed in Norway at the end of the nineteenth century. Both Russian and Japanese whalers were highly

30 Hamanaka Eikichi, *Taiji chōshi* (Wakayama-ken Taiji-chō: Taijichō, 1979), 442-3.

31 Kondō, *Nihon engan hoge no kōbō*, 204-5. 32

32 Ibid., 209. For a discussion of other consequences of Japanese fisheries competition and policy in the early twentieth century, see Muscolino, "Fisheries Build up the Nation."

invested in finding ways to make claims on the grounds while the whales there were still plentiful. Japanese whalers were aware that their catches in and around Japan's coast were declining. When the Russian whaling fleet began importing many tons of fin whale meat from the waters around Korea, Japanese whalers started planning ways they could enter the competition and avoid paying another country's company for the imported meat.³³ After they obtained permission from the Korean government to operate in the seas around Korea, Japanese whalers' presence gradually took over in the region. This was aided by the Japanese victory against Russia in 1905, where they gained almost the entire fleet of Russian whaling ships from the area as part of the settlement.³⁴ By 1909, the whaling corporation Tōyō Hogeī KK (東洋捕鯨株式会社), based out of Osaka, held without contest the major whaling sites in Pusan, Jangjeon, Sinpo and Geoje Island, from which they shipped whale meat and baleen to be sold in Fukuoka.³⁵

Building a Whaling Empire: Manjirō

Whalers also became closely linked to imperial Japanese interests through their contact with foreigners. Contacts between foreign ships and Japanese fishermen were increasingly common in the nineteenth century as more and more ships came into the Pacific. One form of these contacts involved Japanese fishermen who had been blown offshore in a storm, and were either drifting or stranded on uninhabitable islands far from the coast. While these fishermen were not all whalers, whaling still played a part in many of these encounters. Because Japanese fishermen were only allowed to work relatively close to shore until the Meiji period, sailors in the American whaling fleet (rather than other Japanese fishermen) were by far the likeliest

33 Ibid., 196 gives the tons of whale meat, oil and bone imported to Nagasaki in Meiji 31 (1898).

34 Ibid., 223.

35 Kishimoto, *Shimonoseki kara mita Fukuoka • Hakata no kujira sangyō bunkashi*, 19 notes that the baleen was processed there, not just sold wholesale.

people to find shipwrecked or drifting sailors. Americans often picked up stranded Japanese people, but they usually had great difficulties returning them to Japan because of government concerns about religious or ideological contamination through contact with foreigners.

One of the most famous castaways in the history of US-Japan relations was Nakahama Manjirō, also known as John Manjirō.³⁶ He and four other fishermen had been stranded on an uninhabited island after a storm carried them out to sea in 1841. They were rescued by American whalers, and the 14-year-old Manjirō was brought back to New Bedford and sent to school. After finishing school, he worked on American whaling ships until he could make his way back to Japan thirteen years later. He met with a very suspicious reception in Japan, but foreign pressures to open Japan made his expertise in English and experience of America valuable. After being kept and interrogated in Satsuma, far from his home in Tosa, he eventually was rewarded by being granted samurai status, becoming Nakahama Manjirō. From the difficulty he had in returning, and the suspicion he was treated with on his return, it is clear that the Tokugawa government had little tolerance for Japanese who had had contact with foreigners. One reason why Manjirō's story is so well-known is that he was uniquely successful in returning to Japan and making use of the knowledge he had gained while outside the country. Most of the fishermen stranded offshore and picked up by foreign ships, generally American or British whalers in search of water and food, simply never returned to Japan.

After his return, Manjirō was a major proponent of American-style whaling in Japan. As noted earlier, in 1857 he was sent by the shogunal government to Hakodate to promote whaling in and around Hokkaido. This trip was also intended for him to help people acquire the general

³⁶ There are a large number of books written about Manjirō in Japanese. The major English-language translation of his story is Ikaku Kawada, *Drifting toward the Southeast : The Story of Five Japanese Castaways : A Complete Translation of Hyoson Kiryaku (a Brief Account of Drifting toward the Southeast) as Told to the Court of Lord Yamauchi of Tosa in 1852 by John Manjiro* (New Bedford, Mass.: Spinner Publications, 2004). Abel, "The Ambivalence of Whaling" also discusses his importance in international relations and the development of modern whaling in Japan.

ship-handling skills that they would need for Japan to build up a merchant marine or navy capable of competing with the foreign powers appearing around the Japanese islands. Based on an examination of a wrecked whaler, in that year builders in Hakodate had constructed a Western-style sailing ship named the *Hakodate Maru* (函館丸). Manjirō was sent to inspect this ship for its potential conversion to a Japanese whaling vessel. Apparently there was some resistance on the part of the builders and crew to the idea of refitting their ship to become a whaler, and there was some difficulty getting Manjirō on board for the inspection. But Manjirō also preferred a different ship. He suggested it would be more efficient to purchase one of the American whalers that was moored in Hakodate rather than using the smaller *Hakodate Maru*, a ship that did not have any of the necessary equipment aboard. The end result of inquiries into the cost of purchasing a foreign ship was that it would be too expensive.³⁷

Nothing much came of Manjirō's attempt to promote whaling in the north. Instead, after writing a proposal to the shogunate explaining how whaling could add to national interest (*kokueki*), Manjirō received a whaling order from them in the beginning of 1859.³⁸ Within a month, he was sailing out of Shinagawa on the schooner *Ichiban Maru* (一番丸) for the Ogasawara (Bonin) Islands. This schooner had been built when a Russian naval officer caught in a tsunami ordered a replacement ship from Japanese carpenters in Kimizawa, on the Izu Peninsula. After completing the ship for the Russians, these carpenters built five others in the same style, one of which was the *Ichiban Maru*.³⁹ Thus, contact with foreign ships was an important part of enabling the expansion of whaling in Japan, but this incident also shows the pressure of incursions on Japanese territory that drove some of the government's concerns.

37 Nakahama Hiroshi, *Watakushi no Jon Manjirō: Shison ga akasu hyōryū 150-nenme no shinjitsu* (Tokyo: Shōgakkan, 1991), 196-201.

38 Reproduced in Kawasumi Tetsuo and Tsurumi Shunsuke, eds, *Nakahama Manjirō shūsei* (Tokyo: Shōgakkan, 1990), 817.

39 Ibid., 189.

Unfortunately, Manjirō's first trip was cut short by a typhoon that dismasted the schooner and forced them to limp back into Shimoda. Although he did go back out whaling again in 1863, they only caught two sperm whales in the vicinity of the Ogasawara Islands before the Horton Affair caused the shogunate to temporarily give up on the idea of having a colony there.

This incident involved George Horton, a resident of the Bonin Islands colony, an American whaling colony and coaling station. According to a history of the islands published in London, this former English seaman was trying to fetch a chest from a Japanese whaler which the crew of the whaler refused to hand over. After some argument, "neither of them being able to speak the language of the other," the captain finally arrested Horton and brought him back to Yokohama to be charged in the United States' Consular Court with attempted piracy.⁴⁰ The eighty-year-old man was acquitted by the court, which ordered the Japanese government to pay an indemnity of \$1000. Following this the Japanese decided to give up on their own colony in the islands, which also meant ceasing the whaling operations supported by that colony.⁴¹ While this account's accuracy is questionable in that Manjirō was the captain of the whaling ship and known to be able to speak English, a version of the story written by his grandson using family records agrees that the problem was that Horton was trying to take a chest supposedly belonging to one of the foreign crew. This chest was actually full of stolen materials from the ship. The thief was sentenced to jail by the court in Yokohama, but his companion Horton was not. The court did not consider Horton threatening Manjirō with his pistol to be grounds for taking him away from his home and possessions. Thus, the Japanese government had to pay the indemnity to make up for his lost property, and on top of other payments they had to make for other

40 Lionel Berners Cholmondeley, *The History of the Bonin Islands from the Year 1827 to the Year 1876 and of Nathaniel Savory One of the Original Settlers to Which Is Added a Short Supplement Dealing with the Islands after Their Occupation by the Japanese* (London: Constable & Co. Ltd., 1915), available online at <http://mysite.du.edu/~ttyler/ploughboy/boninchol.htm#chapvii> without page numbers. Accessed July 18, 2013.

41 Ibid.

incidents, it was not worth continuing whaling efforts that might lead to further rancorous contact with the American colony in the Bonin Islands.⁴²

Both Japanese and American whalers saw the benefit of having a refueling and watering station in the Ogasawara/Bonin Islands, but politics intersected badly with the personalities of independent-minded whalers. The first Japanese presence there, and its accompanying first major government-supported Western-style whaling efforts, were both short-lived. But again, even failed attempts have something to show about the strong ties between whaling, imperialism, and who controlled access to new waters. While operating around the Ogasawara Islands, Manjirō stopped on the uninhabited island from which he had been rescued by American whalers as a castaway when he was fourteen, and laid claim to the "Greater Japan territorial island Torijima".⁴³

Part of Manjirō's trouble in promoting successful modern, American-style whaling was the fact that the techniques he had learned were no longer sufficient for profitable whaling. It was not a case of learning or teaching American techniques poorly. Rather, even American whalers after the middle of the nineteenth century were struggling to maintain profitable catches as the stocks of whales in the Pacific became severely depleted by focused whaling efforts starting in the 1830s. While the personal experience of unique individuals like Manjirō was important in shaping some of the character of nineteenth-century whaling in and around Japan, it is only when these efforts are tied back into government decision-making that they truly impacted the shape of the Japanese empire. To truly take advantage of new opportunities and compete with other whalers, Japanese whalers had to transition from whaling the coastal waters surrounding Japan, to slightly more distant waters around Hokkaido, Korea, and the Ogasawara Islands, and finally

⁴² Nakahama, *Watakushi no Jon Manjirō*, 209-227.

⁴³ Ibid., 204-206.

to the dramatically different environment of the far distant Antarctic. I argue that the shift from the sites of early modern whaling to contemporary Antarctic whaling echoes the shift into the modern era of the maritime space claimed by Japan.

The important part of this shift was the process by which Japan began to enter into the imperial competition for access to whales throughout the Pacific, rather than just focusing on whales that happened to appear near Japan's coasts and the coasts of the territories they expanded into. Because modern Japanese whaling is such a political issue, it is easy to assume that the early stages of corporate whaling near the turn of the twentieth century were influential in Japan's growth as an imperial power and position in the global political arena. But even though various whaling groups experimented with using new Western-style whaling techniques to compete for diminishing whale resources throughout the Pacific, these modern projects focused on the promotion of whaling within territories already under the control of the Japanese empire. Expansion of a Japanese imperial resource base, at least at first, did not necessarily imply sending out whalers to areas beyond bounds of that empire. As noted in the case of Korea, it could be a piecemeal process where some whalers showed up in a new whaling ground and then later became part of political claims for access to the region. Obviously, Japanese interests in places like Korea were not led by or solely due to the expansion of whaling efforts there.

Japanese Sea Power: Fujikawa Sankei

The writings of Fujikawa Sankei provide a prime example of how modern whaling was being promoted in Meiji Japan. Fujikawa was a doctor interested in fisheries. His father sent him to Nagasaki to learn Western gunnery and artillery before the Meiji Restoration, so he was quite aware of the powerful influence Western technologies could have on the future of Japan. And in

the early years of the Meiji era, he focused on the promotion and development of Japanese fisheries, including the establishment of fisheries schools in Tokyo and Osaka and a company, the Kaiyōsha (海洋社), for whaling promotion.⁴⁴ As part of this goal, he also wrote the *Hogei zushiki* (Whaling diagram or description) to explain the benefits of whaling and the current state of knowledge about it. While the book was not published until the year of his death in 1890, prefaces dated from 1873-1874 note Fujikawa's ties to the Kaiyōsha.⁴⁵ Because there was no immediate and dramatic shift in traditional whaling operations to accompany the dramatic shift in government structure with the start of the Meiji period, it is tempting to assume that the knowledge available about whales and whaling would be similar to what was seen earlier in the Edo period. However, Fujikawa's text shows some of the ways in which the emphasis on building a modern nation and empire, and the changes in international relations in the Pacific, dramatically changed the role of whales and whaling in Japanese society.

Part of the difference apparent in Fujikawa's descriptions was the stronger influence of Western whaling ideas and techniques. His goal was to open up the seas to Japanese use on the model of other nations already commanding marine resources. In other words, he wanted to make Japan into an empire with power over (at least some of) the seas. He references the kinds of whaling that were already being performed in the Pacific by Western nations in ways that Edo-period whaling sources, focused on describing more nearshore practices, did not. The goal of Fujikawa's work, building a stronger nation, appears repeatedly in the prefaces and demonstrates his new focus on marine resources as national resources. While the domainal surveys of resources discussed in Chapter 3 also were promoting the interests of the state, in that case the

44 Ueda Masaaki et al., eds. *Kōdansha Nihon jinmei daijiten*, (Tokyo: Kōdansha, 2001) in Japan Knowledge+ database, <http://www.jkn21.com/> Accessed August 18, 2013.

45 There are five prefaces to Fujikawa's *Hogei zushiki*, dated 1885, 1874, 1873, 1876, and 1873 respectively. The second and fifth prefaces both clearly reference the Kaiyōsha.

state or *kuni* (国) was defined as an individual domain rather than as Japan in its entirety. The nearshore whaling of the Tokugawa period, along with other specialized fisheries, pushed the boundaries of Japan out only a few miles from shore, making use of what resources they could from the coastal waters surrounding the Japanese islands. With the arrival of the Meiji era, people like Fujikawa envisioned a much broader scope for the boundaries of Japanese power, pushing out beyond coastal waters into the deeper ocean where the Western whaling empires had already made their mark. As noted at the start of this chapter, Nagaoka Moriyoshi thought that Fujikawa's description of whaling would be part of what "drives the wealth and power of the nation."⁴⁶ Fujikawa, in the preface he wrote for *Hogei zushiki*, talked about the Western whaling ships arriving in Yokohama and how he asked them about their fishing methods in order to write his book, which would be part of the "foundation of wealth and power" for Japan.⁴⁷ There was a distinct awareness shown by these commentators writing in the early years of the Meiji period that the strength of the modern nation of Japan would come from being able to maximize their use of pelagic marine resources like whales.

Given the popularity of imported technologies during the Meiji push for modernization, it is not surprising that Fujikawa clearly referenced Western sources for his descriptions of whales and whaling, even though there were many texts written in the Tokugawa period about native Japanese whaling. The new Meiji state was looking forwards to a future of parity with other nations, and that meant learning to speak and think in their terms. For just one example of this, when Fujikawa gave basic descriptions of whales in his text, he transcribed the sounds of English measurement units using kanji rather than using Japanese measurements. While he generally

46 國家之富強駕 *kokka no fukyō wo gasuru*, Nagaoka Moriyoshi, "Hogei zukshiki jo", 1885, in Fujikawa, *Hogei zushiki*, 5 reverse.

47 The book had four prefaces written by other authors, and a final preface written by Fujikawa himself. 富強之礎: *fukyō no ishizue*, in Fujikawa Sankei, "Hogei zukshiki jo," Ibid. 15 reverse.

referred to Western whaling rather than whaling of a specific country, the fact that he used English/American measurement units shows that he was taking American whalers as a model for at least some of his planning. This of course makes sense, as they were the most successful whaling nation in the middle of the nineteenth century. In Fujikawa's work, whales are described as a certain number of feet long (*fūdo* 風度) and weighing a certain number of tons (*ton* 噸). He does this even though one of the most widely printed works on whales and Japanese whaling in the nineteenth century, *Isanatori ekotoba*, gave measurements in the more traditional *hiro* (尋: fathoms) and *shaku* (尺: feet).⁴⁸ His one exception to this system is his description of the skull, whose measurements are given in *jō* (丈) and *shaku*, perhaps because he could not find references to such measurements from Westerners, who generally dropped the skeleton overboard or burned it in the process of making oil rather than making it into more easily measured containers like Japanese whalers used to do.⁴⁹

Another example of Fujikawa's reliance on Western whaling sources is in his description of whale oil. Oil was the major product of Western-style whaling. The reason American whaling ships could go out for two or three years at a time before returning with whale parts was because most of the whale was rendered down into more portable barrels of oil on the ship right after it was caught. Everything else that could not become oil, with the exception of the baleen and some small pieces of bone and sperm whale teeth, was tossed back into the ocean. Although oil was also a major product of Japanese coastal whaling, it was not the only one, with meat being an increasingly important product (see Chapter 2). But Fujikawa seems to have determined that oil should be perhaps the only product derived from whales: in the fifth preface he takes the old proverb that seven villages profit from the catch of a single whale and specifies that it is profit

48 For example, Fujikawa, *Hogei zushiki*, 2 reverse. Oyamada Tomokiyo, "Isanatori Ekotoba," (Edo: National Diet Library, Japan, 1832).

49 Fujikawa Sankei, *Hogei zushiki*, 14 reverse.

from a single whale's *oil*, despite keeping the seven fishing villages reference rather than shifting it to reference the entire nation.⁵⁰

While various whaling companies had tried to develop modern whaling techniques in Japan at the end of the nineteenth century, they were only intermittently successful. In the 1870s and '80s, corporations began forming to hunt whales with the new technology of the bomb lance, a shoulder-mounted exploding harpoon gun.⁵¹ A functional exploding harpoon had been in development for over a century, but the first successful version was developed and patented by American Thomas Roys in 1861.⁵² Ultimately, none of the versions of bomb lance, American or Japanese, were particularly effective, in part because aiming from the shoulder standing on the pitching bow of a small whaling boat was nearly impossible. It was not until the Norwegian Svend Foyn developed a harpoon gun that was instead mounted on the bow of a larger (and thus more stable), engine-driven ship that such weapons became successful and revolutionized whaling techniques around the world. A Japanese steamship equipped for whaling in the Norwegian style managed to catch a total of three fin whales in their inaugural cruise around Tsushima in 1899, but failed to catch any when they tried the fishing grounds around Tanegashima (Kagoshima Prefecture), around Yobuko (Saga Prefecture) or around Pusan in Korea. In 1906 off the southernmost peninsula on the Kumano coast, near the village of Kushimoto, another ship operated by the Tōyō Gyogyō company managed to successfully catch fin whales. Their success was perhaps in part because this company was not connected to any of

50 "一頭油可以潤七浦," literally "one (counter for large animals)[s] oil can profit/benefit 7 villages", Fujikawa, *Hogei zushiki*, 14. *Kujira ippiki sore wa nanaura nigiwau* 鯨一疋それは七浦にぎはふ is the form of the proverb in Tessai Hirase and Mitsunobu Hasegawa (illus), *Nippon sankai meibutsu zukai*, 5 vols, vol. 3 (Naniwa: Shioya Uhei, 1797), 16 reverse. In modern Japanese, it is usually rendered something like *Kujira ittō toreba nanaura nigiwau* 鯨一頭とれば七浦にぎわう, for example, in Kawano Ryōsuke, *Chōshū, Kitaura hogei no aramashi* (Nagato: Ōmura Insatsu Kabushiki Kaisha, 2005), 25.

51 See Watanabe, *Japan's Whaling* and Kondō, *Nihon engan hogei no kōbō*, 182-3.

52 His invention was part of the inspiration for Svend Foyn's construction of the Norwegian ship-mounted harpoon cannon system. Richard Ellis, *Men and Whales* (New York: Knopf, 1991).

the whaling groups with a long history in the four main regions of traditional whaling, but rather was run by a Yamaguchi Prefecture native named Oka Jūrō (岡十郎), whose company made a point of hiring a Norwegian gunner for three years to teach them how to operate the equipment.⁵³ In other words, the most successful whalers became the people who were less attached to the old coastal whaling areas and instead were able to shift to a new offshore environment chasing new species of whales. This was particularly true when they were able to use some of the equipment taken from other empires like Russia, operating in the marine areas that were increasingly coming under Japanese control as the empire expanded outwards from the home islands.⁵⁴

Beyond the 19th Century: Japanese Imperial Whaling and Antarctica

The fact that developing new territories for whaling was part of the gradual outward boundary-pushing of the Japanese empire may explain why it took so long for Japanese whalers to join other whaling countries' ships and claims to territory and resources in Antarctica. Whaling is one of the largest natural resource extraction projects yet pursued in and around Antarctica.⁵⁵ While the Japanese still claim no territory on the continent, despite their possession of four research bases there, their claims to the whales in the seas surrounding Antarctica are at the heart of the "whaling problem" today. So it might seem reasonable to assume that Japanese whalers tried to join the competition for whale resources in Antarctica along with the other imperial interests turning to whaling there after an exploratory expedition of Dundee whalers in 1892-93.

53 Fukumoto Kazuo, *Nihon hōgei shiwa : Kujiragumi manyufakuchua no shiteki kōsatsu o chūshin ni*, vol. 83, Kyōyō Sensho (Tōkyō: Hōsei Daigaku Shuppankyoku, 1993) starting on p 220; Kondō, *Nihon engan hōgei no kōbō*, 206.

54 For a discussion of the difficulty traditional whalers could have in shifting their targets and techniques, see Jakobina Arch, "From Meat to Machine Oil: The Nineteenth-Century Development of Whaling in Wakayama," in *Japan at Nature's Edge*, ed. Ian Jared Miller, Julia Adeney Thomas, and Brett L. Walker.

55 The other major natural resource exploited in Antarctica was seals, hunted for fur and oil especially in the nineteenth century. For a detailed look at the Antarctic seal fishery, see Briton Cooper Busch, *The War against the Seals: A History of the North American Seal Fishery* (Kingston, Ont.: McGill-Queen's University Press, 1985).

The global shift to Antarctic whaling was complicated by the fact that the overexploited northern species like the right and bowhead whale were not abundant in the south, so it also took a shift in target species to make Antarctica attractive. Japanese whalers were caught up in the same need for a change in whaling grounds as other whalers were by the end of the nineteenth century. They did pursue the development of new techniques and the adoption of Western techniques, so why were they not also competing for whales in Antarctica in the early 1900s?

It would have been hard not to know about the development of Antarctica at the turn of the twentieth century, and in fact people in Japan were just as aware of Antarctic exploration as citizens of America, Britain, Germany, or other participants in the Race to the Pole. Near the end of the first decade of the twentieth century, when the North Pole had been conquered, explorers turned their eyes towards the South Pole. The Race to the Pole is important in the history of claims to Antarctica, and it is telling that the two major competitor nations, Britain and Norway, both were involved in whaling efforts based out of South Georgia by 1909. In 1911 and 1912, Dr. Douglas Mawson of Australia, Lt. Shirase Nobu (白瀬矗) of Japan, and Lt. William Filchner of Germany were all in Antarctica along with Norway's Amundsen and Britain's Scott, and in America, a nation not directly competing for the South Pole, newspapers followed the competition with interest.⁵⁶ Japanese newspapers also had reported on Antarctic exploration before the Race to the Pole, reprinting wire reports about other nations' planned expeditions as early as 1891, and scientists in Japan could follow news of exploration closely through articles published in the *Journal of the Geological Society of Japan*.⁵⁷ In fact, it was the availability of

56 For example, this list of concurrent expeditions is given in Anon, "One of a Company of Great Explorers: Scott Last of a Line of Men Who Braved Antarctic Danger and Tried for the Pole", *New York Times*, February 11, 1913, p. 6.

57 For example: Anon, "Nankyoku tanken no keikaku", *Yomiuri shinbun*, October 2, 1891, morning edition, page 1; Seki Hideo, "Eikoku no nankyoku kantai shōsoku [News of England's Antarctic examination-party]", *Journal of the Geological Society of Japan*. Vol 10, no. 117 (June 20, 1903): 244-247; Yamazaki Naokata, "Otto Norudenshurudo-shi nankyoku tanken no kekka, furi 'sukoshia' go no tanken [Mr. Otto Nordenskjöld's Antarctic expedition results, attached to the *Scotia* expedition]." *Journal of the Geological Society of Japan*, vol 11, no 128

such information which led to the expedition that Shirase organized, one which the Japanese, at least, felt to be competitive with Scott's and Amundsen's.

But although Shirase's expedition was highly publicized, it was not linked to whaling interests, nor was it funded directly by the Meiji government, which had plenty of other expensive projects to deal with at the time. Until Antarctic whaling could more directly promote the interests of the Japanese empire, whaling corporations made do with pursuit of stocks closer to home. Whaling historian Bjørn Basberg characterized the development of Japanese whaling in a similar manner as in other analyses of Japanese modernization, focusing on the process of adoption of foreign technology.⁵⁸ He argued that the focus of Japanese whalers on meat rather than oil limited their expansion to Antarctica until "freezing technology was sufficiently developed to allow for the long voyage from Antarctica."⁵⁹ He also noted that the whaling crisis of 1931 led to suspended operations for Britain and Norway, after which they restructured their fleets to keep only the newer factory ships, so that the older ships were available for purchase in Japan. It was at this point of technological confluence that the Japanese were able to enter the Antarctic whaling industry. While the availability of the necessary technology was obviously an important factor in the timing of Japan's entrance, Basberg did admit that the Japanese focus on oil production in their early years of Antarctic whaling was not due to technological constraints in preserving meat so much as it was due the need for foreign currency "used for the import of goods used for war preparation."⁶⁰ This point should be emphasized far more strongly. After all,

(May 20, 1904): 194-197; Nishida Yoshirō, "Bankin nankyoku tanken no gaikan [Outline of recent Antarctic expeditions]." *Journal of the Geological Society of Japan* vol 14, no 170 (November 20, 1907): 41-414.

58 Although modernization theory in general is less prevalent than it used to be, in the case of histories of science and industry it still lingers. For example, in Morris Low, ed. *Building a Modern Japan: Science, Technology, and Medicine in the Meiji Era and Beyond*, New York: Palgrave Macmillan, 2005.

59 Bjørn L. Basberg, "Convergence or National Styles? The Japanese Challenge to British-Norwegian Hegemony in the Twentieth-Century Whaling Industry", *Research in Maritime History*, no 14, St. John's, 1998, p 269.

60 Basberg, "Convergence or National Styles?", p. 271.

if there had been a strong enough interest in joining the whaling operations in Antarctica earlier, they did have access to the Russian whaling ships acquired after the Russo-Japanese war.

The goals of the empires involved in Antarctica shaped the characteristics and perceptions of the whaling industries there, and while technological innovation allowed for some of the changes in the industry, such as the move offshore to factory ships, it was pressure from political and economic interests that led to the search for such innovations. Perhaps if Shirase's expedition had been more successful, leading to Japanese territorial claims in Antarctica in the 1910s, there would have been greater motivation for Japanese whalers to join in the competition earlier. But as it was, early whaling stations and whaling corporations' search for competitive advantages were most closely linked to British territorial claims based on a heroic view of conquering the Antarctic. The involvement of the British Navy in surveying expeditions enhanced this link and provided a means by which scientific knowledge about Antarctica could be coded as serving the empire, including the *Discovery's* later voyage in 1923, focused on learning about whale populations. By this time, whaling nations already in the Antarctic recognized that some regulation of catches would need to be implemented in order to keep the Antarctic populations from suffering the decimation of earlier whaling targets. From the Japanese perspective, however, joining an agreement to limit their catches while large amounts of whale oil were still being extracted could be seen as far too similar to the unequal treaties they had been forced to sign when Commodore Perry arrived in 1853 to open their country to trade.⁶¹ The reason why Japanese whaling did not produce strong territorial claims in Antarctica, as it had for Britain, is that there was less need for territory after the development of factory ships.

⁶¹ The issue of treaty revision was one of the driving forces shaping the politics of the 1880s in Japan, leading up to the promulgation of the Meiji Constitution. For a thorough discussion of problems in Japan's international diplomacy, see Akira Iriye, *Japan and the Wider World: From the Nineteenth Century to the Present*, London and New York: Longman, 1997.

And when Japan entered Antarctica in the 1930s, other territorial claims closer to home were far more of a concern for a Japanese government embroiled in conflict in Manchuria, as long as Japan could maintain access to Antarctic resources without claiming land there.

Conclusion: The Beginnings of a Pelagic Empire

Whaling was only one of the tools that the Japanese government, whether the shogunate or the later Meiji government, used to expand its territory into the Pacific and form modern Imperial Japanese holdings. Political backing was important for early attempts by the Tokugawa shogunate to start up modern whaling in Hokkaido and the Ogasawara Islands, and the politics of colonial possessions were entangled with Japanese whaling around Korea as well. But as this chapter shows, the formation of the Japanese empire was not solely a political issue. An environmental history perspective shows the importance of marine resources and access to them for the growing Japanese empire. There are two main reasons why whaling was intertwined with the growth of the Japanese empire in the nineteenth century: first, whaling could not be a purely local Japanese enterprise because whales themselves migrated throughout the entire Pacific and came in contact with people from many different countries looking to exploit marine resources. This forced people who wanted access to whales to consider larger boundaries for Japanese territory than just coastal waters. Second, as whalers turned farther afield, the promotion of successful, maximally efficient fisheries also served the Japanese government's desire to lay claim to the resources of newly adjacent territories, and whalers became part of that colonial expansion.⁶²

In the early part of the nineteenth century, it became clear to the shogunate that coastal defense alone was not enough to maintain its own territory. This was especially true when part of

62 See also Tsutsui, "The Pelagic Empire."

that territory included marine resources like whale populations which were necessarily shared with other nations bent on exploitation of the Pacific. Early attempts to set up traditional whaling bases in new territories like Ezo (Hokkaido) were not successful, nor did the coastal whalers serve as a naval force capable of holding off expanding European and American empires. However, increasingly frequent contact with foreign whalers demonstrated the possibilities of shifting to a new form of whaling, and of targeting new species in previously untouched territories and reaching out into a wider maritime realm. The first stage of modernization involved trying to adopt American whaling practices. However, once the Russo-Japanese War provided whalers with the equipment used by the Russian whaling fleet in the waters around Korea, whaling became a more successful imperial project for Japan and the sea power envisioned by Tokugawa leaders became reality in a different form. With the introduction of scientific fisheries management theories from the West, and also access to their fishing technologies such as motorized whaling ships with bow-mounted harpoon guns, Japanese whalers were able to lay claim to whale populations further and further from shore, eventually (although slowly) leading them to the Antarctic whaling grounds that are so prominent in the contest over who can make use of whale resources today.

Japanese presence in Antarctic whaling was simply another in a series of gradual steps taken by whalers and the Japanese government in the nineteenth century to lay claim to whales and the areas they could be found most abundantly. But by taking those steps, the area of the ocean and the species that came under attention shifted dramatically in the modern era. The expansion from Japan and its surrounding colonies down to the Southern Ocean did not involve claiming every piece of terrestrial territory between Japan and Antarctica on the way, but it was still part of the trajectory of maritime expansion of the empire and its resource base. Because the

new, open ocean environment and the deep-sea whales that inhabited it were so different from the coastal waters and migratory populations that had been the focus of early modern Japanese whaling, modern Japanese whaling has a very different character than traditional whaling — despite the continuities that exist between the two eras and modern whaling supporters' emphasis on those continuities. Modern whaling required more than just reconstructing the whaling industry to match modern techniques and equipment being used by other nations first. More importantly, it required shifting the boundaries of Japan to encompass a whole new pelagic environment.

Epilogue

Whales and Whaling, Past and Present

I have presented this history of whales in early modern Japan as distinct from a history of whaling during the same period. Of course the history of whaling features within this narrative, because without this industry, many of the encounters with whales and their parts would not have been possible. Thus, this project still has a role in illuminating the thorny issues of 21st-century whaling. As noted in the introduction, pro-whaling supporters often try to tie present practices directly to a continuity with a traditional whaling culture generally centered in the Tokugawa period. Given the quite varied and specific cultural roles of whales during this period, it should be clear that there are more changes than continuities in the cultural role of whales in Japan in the past few centuries. The difference is made more visible by considering the history of whales and whaling not as a cultural history, but as a marine environmental history. This is because cultural analyses of the history of whaling often consider the general case of "whales" as a group, without making a distinction of what species and habitats might have changed within that category.

Thinking about this history environmentally means defining the boundaries of the waters people ventured into, the particulars of species and their movements and population shifts, and the changes they went through over time. Some of the changes are apparent even within the Tokugawa period, as whalers had to shift their target species and technologies for catching them as well as the waters in which they hunted whales. But there was an even more dramatic shift in the marine environment and species of whales pursued by modern Japanese whaling. People hunted whales in both periods. But in early modern Japan, nearshore coastal whaling took advantage of migratory populations of primarily right, humpback, and gray whales. Modern

Japanese whaling expanded the boundaries of their hunt, first to a broader coastal area including imperial colonies, and then down to pelagic whaling in Antarctica for blue, fin, and minke whales. What are the consequences of this difference?

First, differences in the practice of acquiring whales influenced the numbers, types, and locations of people involved in whaling. Some places that were centers of early-modern whaling groups still have ties to modern whaling corporations. However, places like the town of Taiji are the exception rather than the rule. Many whaling groups collapsed at the end of the nineteenth century, and their villagers moved on to other means of making a living. At the same time, modern whaling corporations were getting started, founding new shore bases in places like Ayukawa which did not have any early-modern history of whaling. Entire villages and even people from neighboring villages could become involved in traditional whaling groups: in the mid-19th century the Ogawajima whaling group employed 800 whalers and at least another 300 day-laborers for processing any whales caught.¹ Modern whaling corporations, on the other hand, conducted most of their operations far from Japanese settlements. In the early years, they also employed Norwegian gunners and Korean crewmen, with only between 10 and 20 crew for each catcher boat, and thus had a very different cultural mix. By the time factory ship whaling was developed in the 1920s, the total staff for one corporation's factory ship and all associated catcher boats was not more than 340 people.² As sociologist Watanabe Hiroyuki points out, the management of these companies may have been Japanese, but in making use of technologies from other countries like Norway, they relied on foreign experts and developed a form of modern whaling in line with global practices. Apart from the very basic similarity of capturing and

1 Hōshūtei Riyū, "Ogawajima geigei kassen," ed. Nōsan gyoson bunka kyōkai (Tokyo: Nōsan gyoson bunka kyōkai, 1840).

2 Hiroyuki Watanabe, *Japan's Whaling: The Politics of Culture in Historical Perspective*, trans. Hugh Clarke (Melbourne: Trans Pacific Press, 2009). Factory ship numbers are on page 18, catcher boats on 29-33.

killing whales, this made modern Japanese whaling "completely different from the whaling that existed before."³

The shift in priorities and structure of the whaling industry also is apparent in the ways that people encountered whale products after the end of the nineteenth century. Some continuities of use remain: *bunraku* puppet heads are still repaired with baleen instead of using spring steel or plastic.⁴ But whale oil has been replaced by synthetic chemical pesticides in modern agriculture, and the consumption of whale meat also has a different context today. Because whale meat is presented as an important part of Japan's cultural heritage by whaling proponents, understanding changes in whale meat consumption is particularly important to fully understand the level of discontinuity between the impact on Japanese culture of early-modern and of modern whaling. The Tokugawa period had very local markets for fresh whale meat and only slightly less local markets for salted whale meat. It was not until the end of the nineteenth century and the early twentieth century that whale meat consumption began to spread to the rest of Japan. Watanabe Hiroyuki explains how the needs of military supply and the marketing efforts of whaling corporations combined to make canned whale meat available and increasingly popular in the twentieth century. Its popularity had less to do with any particular attachment to the taste of whale and more to do with the fact that it was a very inexpensive meat available during the depression that followed World War I, particularly for military provisions in the 1930s and 40s.⁵ One reason why it was so inexpensive was that, for Antarctic whaling, meat was a byproduct of the collection of whale oil sold to European buyers to earn foreign currency.⁶

3 Ibid., 48. The hunt for beaked whales off the Bōsō peninsula is an exception to this complete difference. Although the technologies used today are not the same as they were in the early modern period, they still practice shore-based whaling for Baird's beaked whales.

4 Barbara C. Adachi, *Backstage at Bunraku: A Behind-the-Scenes Look at Japan's Traditional Puppet Theatre* (New York: Weatherhill, 1985).

5 Watanabe, *Japan's Whaling*, 98.

6 Ibid. Also discussed in Chapter 1, particularly pages 45-6.

Whale meat consumption did become widespread in modern Japan, but it did not permanently become part of the food culture of modern Japanese people. A 1941 survey about whale meat consumption noted that 51% of the communities surveyed in central Honshu (Kinki and Chūbu areas) did not eat whale meat before the introduction of modern Norwegian whaling techniques at the end of the nineteenth century. By the time of the survey forty years later, around 80% of communities in this region ate whale meat. Even then, there was still patchy distribution of whale meat consumption; four communities in the longstanding whaling prefecture of Wakayama still claimed not to eat whale meat by 1941.⁷ Whale meat consumption peaked in Japan in the 1960s at least partly due to its inclusion in the school lunch program, but declined steadily thereafter. Before WWII, whale meat was around 15% of total meat consumption in Japan, became 46% in the immediate postwar period of food shortages, then fell to only 2% of all meat consumption by the 1980s.⁸ Today, Japan has whale meat stockpiles from the minimal amount of Antarctic whaling continued under scientific permit since the moratorium. These stockpiles have continued to grow since 1997, showing a demand far lower than the supply, which itself is at lower levels than before the cessation of commercial whaling.⁹ So much effort has been expended in proving the centrality of whale meat to Japanese food culture that the possible uses of other products are rarely noted today, in contrast to the wide diversity of whale products circulating in the Tokugawa period.

Perhaps the largest shift apparent in the connections between humans and whales in Japan is in the area of knowledge and study of whales. Whales are no longer fish, but mammals, set into the Linnean system of classification. Study of whales has increasingly become a specialized

7 Ibid., Chapter 4.

8 International Fund for Animal Welfare, "The Economics of Japanese Whaling: A Collapsing Industry Burdens Taxpayers," (Yarmouthport, Mass.: International Fund for Animal Welfare, Inc., 2013), 7.

9 Ibid., 7-8. This report was based on Japanese Fisheries Agency statistics. Note that the Institute for Cetacean Research also tried to auction off frozen whale meat stockpiles four times in 2011-2 and failed to sell 908.8 tons, or three-quarters of the meat offered.

type of research whose results have been leveraged for the management of whale populations, rather than distributed to a broader curious public. Whalers and cetologists had close ties in the early twentieth century, as whalers were best able to get close enough to whales for scientists to be able to study them.¹⁰ However, while whale science globally has shifted since the 1970s and the rise of the environmental movement, Japanese cetology remained closely tied to the whaling industry. In fact, the Whales Research Institute, ostensibly pursuing scientific research on whales, is what remains of the commercial whaling industry in Japan since the moratorium shut down commercial whaling but allowed for limited whaling for scientific research.¹¹ Opponents of Japanese whaling increasingly doubt the validity of this research and the need to kill whales in order to gather it, since the rise of non-fatal data collection methods such as satellite tagging.¹² This viewpoint was legitimized by the United Nations' International Court of Justice, which decided on March 31, 2014 that current Japanese whaling in the Antarctic was not for scientific purposes, and thus no further permits under the International Whaling Commission's commercial moratorium exemption for scientific research should be granted. The court did allow that "JARPA II [Japanese Research Programme in the Antarctic, second phase] involves activities that can broadly be characterized as scientific research," but the program was not "reasonable in relation to achieving its stated objectives," meaning the real object of supposedly scientific whaling under JARPA II was in fact not science.¹³

10 D. Graham Burnett, *The Sounding of the Whale: Science and Cetaceans in the Twentieth Century* (Chicago: University of Chicago Press, 2012).

11 Watanabe, *Japan's Whaling*.

12 International Whaling Commission, "Annual Report of the International Whaling Commission 2006," (Cambridge: International Whaling Commission, 2007), especially pages 32-4 in section 11 of the Chair's Report, which deals with Scientific Permits. This section records arguments against the nature and necessity of lethal scientific sampling for whales and the claims that articles produced by Japanese whale scientists are rarely published in peer-reviewed journals. Japan claimed that this was due to refusal of these journals to accept articles based on lethal sampling on ethical grounds rather than noting that they might be considered poor science and thus not pass peer review. See also International Fund for Animal Welfare, "The Economics of Japanese Whaling: A Collapsing Industry Burdens Taxpayers."

13 International Court of Justice (ICJ), "Whaling in the Antarctic (Australia v. Japan: New Zealand Intervening)," March 31, 2014, p 65. <http://www.icj-cij.org/docket/files/148/18136.pdf>

At the same time, the global environmental movement's adoption of whales as one of the most important symbols of endangered charismatic megafauna has reshaped popular ideas of whales, increasing the pressure on Japan's scientific whaling but also providing a new perspective on whales for the general public in Japan.¹⁴ After all, although there is government support for continued whaling in Japan, there are also global organizations such as Greenpeace with branches in Japan who are working to protect whales and change public opinion.¹⁵ Thus, the international politics and cultural roles of whales in the environmental movement have a strong influence on what information might circulate about whales in Japan today, which was not the case in Tokugawa Japan.

A similar problem exists for the religious role of whales today. While it is true that some of the memorial services for whale spirits continue to be held regularly, for example in Kayoi, these are carried out now as part of the village's identity as a historical whaling town. With whaling taking place far offshore, the local dimensions of interaction with dead whales have vanished. Stories about whales appearing in dreams to direct the behavior of people living in places that whales migrated by have far less resonance in a Japan where corporations, and now the government-backed "scientific" replacement for those corporations, rather than village-based whaling groups, are the ones killing whales. The particular connections between local residents and the migratory patterns of whales that led to the religious understanding of the role of whale spirits in Japan have changed dramatically in the modern era.¹⁶ Furthermore, whales are no

14 For the global perspective on this, see Arne Kalland, "Management by Totemization: Whale Symbolism and the Anti-Whaling Campaign," *Arctic* 42, no. 2 (1993). For the Japan-specific version of his argument, see Arne Kalland and Brian Moeran, *Japanese Whaling: End of an Era?*, Nordic Institute of Asian Studies Monograph Series ; No. 61 (London: Curzon Press, 1992).

15 See, for example, the Greenpeace fact sheet on whale meat consumption in Japan available at <http://www.greenpeace.org/international/Global/international/planet-2/report/2009/6/fact-sheet-the-whale-meat-mar.pdf>, Accessed December 30, 2013.

16 Although Kumi Kato, "Prayers for the Whales: Spirituality and Ethics of a Former Whaling Community - Intangible Cultural Heritage for Sustainability," *International Journal of Cultural Property* 14(2007) argues that the continuation of these ceremonies shows a particular, sustainable connection to nature in Kayoi, this cannot be

longer exceptional in being treated as human-like spirits after death. The focus on honoring dead animals has shifted to center today on household pets, which were rarely honored with commemorative ceremonies in the Tokugawa period.¹⁷

In conclusion, a complete description of the cultural role of whales relies on the particular connections that they have facilitated between the marine environment and the terrestrial one. With the expansion of Japanese fisheries far out into the Pacific and other waters, a new set of connections must be formed with the people living in Japan, as their marine environment is no longer just the waters immediately surrounding the Japanese islands. While whaling in a broad sense has continued from the early modern to the modern eras, the texture of the interactions between humans and whales has been altered to include new areas of the ocean, species that were not previously hunted, and more global and international pressures than existed in the past. A deeper understanding of the unique ways in which whales brought the marine environment into the lives of people in Tokugawa Japan highlights the particularity of the period. When considering how different in many of these particulars the environment and culture of Japan are today, it is clear that convincing arguments for the continuation of whaling in the modern era cannot rely solely on the importance of whaling in some kind of ahistorical and unchanging Japanese culture.

said to apply broadly to Japanese culture as a whole.

17 Barbara R. Ambros, *Bones of Contention: Animals and Religion in Contemporary Japan* (Honolulu: University of Hawaii Press, 2012).

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